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# THE CHANNEL TUNNEL

# THE CHANNEL TUNNEL

AND

# PUBLIC OPINION

COMPILED BY

JAMES KNOWLES

EDITOR OF

THE NINETEENTH CENTURY'

LONDON

KEGAN PAUL, TRENCH, & CO., 1 PATERNOSTER SQUARE

1883

H 3896

# PREFACE.

THE present compilation is intended to show the strength of public feeling in this country against the Channel Tunnel scheme.

'Until the English people have gone quite mad,' said a distinguished American, 'they will refuse to listen to any such thing.'

The ensuing pages will prove how far they are as yet from madness.

To the remarkable Protest published last year in the 'Nineteenth Century,' and here reproduced, is now added a hardly less remarkable and representative list of protesting newspapers and journals.

The following quotations, as will be seen, are taken from the 'Times,' the 'Daily News,' the 'Standard,' the 'Daily Telegraph,' the 'Morning Post,' the 'Morning Advertiser,' the 'Pall Mall Gazette,' the 'St. James's Gazette,' the 'Globe,' the 'Echo,' the 'Manchester Guardian,' the 'Manchester Examiner and Times,' the 'Birmingham Daily Gazette,' the 'Birmingham Daily Post,' the 'Scotsman,' the 'Dundee Advertiser,' the 'North British Daily Mail,' the 'Edinburgh Courant,' the 'York Herald,' the 'Western Daily Press,' the 'Leeds Mercury,' the 'Western Morning News,' the 'Observer,' the 'Spectator,' the 'Saturday Review,' the 'Statist,' the 'Field,' the 'John Bull,' the 'Army and Navy Gazette,' 'Lloyd's Weekly News,' and the 'Sunday Times.'

So clear and strong and indignant a movement of common sense as exists against the projects of the Company-promoters should of course sweep them all away at once. But Company-promoters

die hard, and profoundly believe in wearying out public attention, and in the proverb that everybody's business is nobody's.

A Committee has therefore been formed, of which Lord Wolseley, Mr. Burt, M.P., Mr. Bromley-Davenport, M.P., Mr. Frederic Harrison, Mr. Jacob Holyoake, Mr. George Howell, Sir William Gregory, Sir Algernon Borthwick, the Rev. J. Guinness Rogers and others are members, to watch the proceedings of the projectors and to act accordingly for the information of the Public.

JAMES KNOWLES.

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# THE CHANNEL TUNNEL

AND

# PUBLIC OPINION.

## A PROTEST.[1]

THE undersigned, having had their attention called to certain proposals made by commercial companies for joining England to the Continent of Europe by a Railroad under the Channel, and feeling convinced that (notwithstanding any precautions against risk suggested by the projectors) such a Railroad would involve this country in military dangers and liabilities from which, as an island, it has hitherto been happily free—hereby record their emphatic protest against the sanction or execution of any such work.

BATH (MARQUIS OF).
SLIGO (MARQUIS OF).
PEMBROKE (EARL OF).
LYTTON (EARL OF).
DUNSANY (BARON).
OVERSTONE (BARON).
HALIFAX (BARON).
WAVENEY (BARON).
PENRHYN (BARON).
BURY (VISCOUNT).
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[1] From the *Nineteenth Century*, for April 1882.

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The Duke of Wellington.
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The Marquis of Hamilton.
The Marquis of Waterford.
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The Earl of Albemarle.
Earl Fortescue.
Earl Grey.
The Earl of Longford.
The Earl of Lucan.
The Earl of Malmesbury.
The Earl of Morton.
The Earl of Romney.
The Earl of Sandwich.
The Earl of Shaftesbury.
The Earl of Strafford.
Viscount Brabazon.
Viscount Downe.
Viscount Hawarden.
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Bishop of Peterborough.
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Gen. H. Eyre.
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[1] From the *Nineteenth Century* for May 1882, with as many additional names as space can here be found for.

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[1] THERE is some difficulty in reducing the general dislike and disapproval of the Channel Tunnel schemes now before Parliament to a definite expression and a practical form.

With the view of helping to do so, it has been arranged that a declaration by way of protest in the foregoing terms shall be submitted for signature by all who care to join in it.

The Public has no *locus standi* as opponent to a private bill, and cannot appear before the ordinary committees in the ordinary way; nor has it any other machinery for guarding itself from the Parliamentary attacks of commercial speculators. Its interests are thus at a great disadvantage as compared with those of Company-promoters, who have a complete organisation, which is worked 'night and day' for their own very simple commercial interests.

Promoters are represented almost too well in Parliament, especially in the lobbies, and it is conceivable that a cause involving vast public interests might be practically decided on before it came to its judicial hearing in the House, and in the absence of the party most gravely concerned.

Promoters' practices have indeed been hitherto comparatively strange to the English Parliament; but it is easy to imagine a state of things in which they might succeed, and it may therefore be worth while to consider some of them for a moment.

Suppose, for the sake of argument, a similar matter to the Channel Tunnel scheme, similarly introduced as a private bill, greatly disliked out of doors, but personally approved and supported by some important member of a Government. What course would its Parliamentary advocates be likely to take if disturbed by public opinion in the quiet progress of their measure?

They might first—under cover of an admission that there were perhaps two sides to the question—suggest or accept a committee of investigation into its principles—to be appointed by and privately held at the department presided over by the approving Minister. To this committee only such witnesses would be invited as the department thought proper, and if, notwithstanding such carefulness, the majority of them were found likely to be hostile, the committee

[1] From the *Nineteenth Century* for April 1882.

might be dropped without making any report, and nothing more would be said about it.

The next step might be the appointment, under the same favourable auspices, of another and larger committee—still selected by the departments. This might be safeguarded by excluding from its scope the vital matters which had been already found insuperable. The report of such a committee might easily be put forward in the House by a skilled debater as a sufficient answer to objectors—even although the most real objections had been left aside from its consideration.

Or, should the result of the second committee be unsatisfactory, a third even might be constituted on some plausible pretext, and the whole matter thus kept in delay until public attention was wearied out.

Meanwhile the various small artifices of 'lobbying' might be going on—artifices so small as to seem almost beneath notice, but, nevertheless, not too small to have their weight. First one member and then another might be influenced by them so far as to commit himself to an expression of approval before he had really thought or cared about the matter. He would naturally conclude that his constituents were equally indifferent, and the mere fact of having taken a side at a dinner, or given an opinion at a luncheon, might enlist his *amour propre* as a consistent man, and consequently his vote, almost before he knew it.

Prepared for in such ways, the division, when it came, vigorously whipped for on one side only, would be a foregone conclusion; and the public might, when too late, find itself helplessly bound and handed over to a knot of private speculators.

But to return to the Channel Tunnel project. The disapproval and dislike of the general public to it have become continually more and more obvious. Almost the whole of the most influential journals, led by the *Times*, which was the first to sound a warning, have agreed in its condemnation, and in this the Press is but the echo of the talk of ninety-nine out of every hundred unbiassed men who have considered the subject.

Awake at last to an attempt upon their birthright, which they have hitherto thought too absurd to be worth serious opposition, they have weighed, as wise King Leopold advised in such a case, 'the probable gain against the possible loss,' and find the disproportion so stupendous as to leave little if any room for discussion.

Three consequences alone, which would necessarily follow from the project if carried out, are found more than enough to condemn it—a certainty, a probability, and a possibility:—

1. A certainty of increased military expenditure, even upon the showing of the promoters themselves, who admit that the Tunnel must be defended by extra forts, guns, and troops always in a state of watchful readiness.

2. A probability, almost, indeed, amounting to a certainty, of irresistible outcries for more and more armaments, arising out of Panics about invasion which would undoubtedly recur with greater acuteness and greater frequency in proportion to the increased closeness of the links binding us to a Continent in arms.

3. The possibility of an irretrievable disaster from invasion. For whereas now such a catastrophe, if it occurred (and no serious person has ever denied its *possibility*), might be in time got over, and England be once more herself again within her 'silver streak,' then no successful invader would leave the soil until he had first stipulated for continued possession of the English end of the Tunnel, and could thus for ever keep his foot within our open door.

In compensation for such risks and liabilities as these, what do the Company-promoters offer to the country?—increased comfort in the journey to Paris, and the nearer approach, through increased commerce, of the 'universal brotherhood of mankind'!

As to the sea-sickness, Mr. John Fowler has long ago proposed a preferable remedy for it in 'floating railway stations' and improved harbours.[1]

As to the 'universal brotherhood' argument—is the immediate contiguity to each other of the Great Powers of Europe so obviously conducive to peace and goodwill that we should be in haste to join ourselves as closely as possible to them—to become one of that 'happy family' of mutually watchful tigers?

And are we still so sure as, say, in 1851, that men have only to bargain and haggle with each other to become firm friends—that unlimited buying and selling is the one short cut to the kingdom of heaven upon earth? Surely, to ask such questions is to answer them.

No business-like attempt has yet been made by the promoters to show how, and how much, the trade of the country is to be improved by our becoming part and parcel of the system of European railroads. Our great carrying trade might, as some hold, be very injuriously affected by the change. On the other hand, the mercantile advantages might be so large as to warrant, in the minds of others, even some remote risk to the national security. But these advantages have not been yet set forth; and were they clear, the projectors, as business men, would surely put them forward, rather than declaim about 'universal brotherhood' as an inducement to shareholders.

Instead of such business-like considerations, pretences are advanced that a former Government committed itself beyond withdrawal to approval of the scheme. It is enough to answer that the actual correspondence gives no foundation whatever for any such pretences beyond general diplomatic courtesies, and that the Country is at this moment absolutely free and uncommitted by any treaty or engagement of any sort or kind upon the subject.

[1] See *Nineteenth Century*, March 1882.

Were it, indeed, otherwise, and had some member of a previous Government been tempted to go further than vague assurances, the nation might well insist that 'many things have happened since then'; that its soldiers and sailors, and even its Parliament, were never properly consulted about it, and itself never awakened to the folly until now.

Had any such engagements been made, to its grave detriment, without its privity and behind its back, the language of Shakespeare would alone be strong enough to convey its anger of repudiation.

'This royal throne of kings, this scepter'd isle,
This earth of majesty, this seat of Mars,
This other Eden, demi-paradise,
This fortress built by Nature for herself
Against infection and the hand of war,
This happy breed of men, this little world,
This precious stone set in the silver sea,
Which serves it in the office of a wall
Or as a moat defensive to a house,
Against the envy of less happier lands,
This blessed plot, this earth, this realm, this England,
This nurse, this teeming womb of royal kings,
Fear'd by their breed and famous by their birth,
Renowned for their deeds as far from home,
For Christian service and true chivalry,
As is the sepulchre in stubborn Jewry
Of the world's ransom, blessed Mary's Son,
This land of such dear souls, this dear dear land,
Dear for her reputation through the world,
Is now leased out, I die pronouncing it,
Like to a tenement or pelting farm:
England, bound in with the triumphant sea,
Whose rocky shore beats back the envious siege
Of watery Neptune, is now bound in with shame,
With inky blots and rotten parchment bonds:
That England, that was wont to conquer others,
Hath made a shameful conquest of itself.'[1]

It is pretended, again, that the Company-promoters would be hardly used if now—when for the first time their project is receiving public attention—they were forbidden, in the interests of the State, to proceed further. But they would be in no different position from any other Company-promoters who have chosen to venture a certain amount of money on the chance of obtaining public approval. These particular promoters have spent their money in procuring Parliamentary permission to make certain trial holes (now being used by

[1] Speech of John of Gaunt. *Richard II.* act ii. sc. 1.

way of advertisement to their scheme)—*but nothing more.* If the public now withholds support from any further prosecution of it, how are the promoters in a different position from any others of their trade who make a bad venture at their own risk?

The articles which have appeared in this Review and elsewhere within the last few months have been judged by the great bulk of the public to show sufficient cause against the Tunnel schemes, and need not be recapitulated here.[1] To hang the safety of England at some most critical instant upon the correct working of a tap, or of any mechanical contrivance, is quite beyond the faith of this generation of Englishmen. To disregard the warnings of her most trusted soldiers and sailors, and yet to play into the hands of those who wish nothing better than the spread of a spirit of militarism —these things are also beyond the assumed credulity and indifference of a generation which has watched the European wars of the last twenty years.

The supporters of the scheme, beyond the circle of the Company-promoters and their personal friends, seem to be chiefly foreign marshals and generals—who, oddly enough, can 'see no danger in the Tunnel'—and foreign citizens whose own conscriptions leave them nothing more to fear in the way of extra military burdens. Besides these there are a few high-hearted, noble-minded men, whom all must reverence, and who look 'beyond this ignorant present' to the nearer advance of a great future for mankind in such adventures and opera-

[1] It may be useful, nevertheless, to add a modern instance which Mr. Alfred Seymour sends as throwing additional light upon one of the military objections which have been urged. He writes: 'A few days after the battle of Sedan I was at Brussels, and whilst there I had the opportunity of conversing with an aide-de-camp of Marshal MacMahon's in the drawing-room of a mutual friend, who was, with her family, a temporary refugee from France. I had just returned from Sedan, where I had visited the battle-fields, and the conversation naturally turned upon the events of the war. The Marshal's strategic movement to the rear, after the early eventful battles, when his whereabouts was for three days unknown to the general public, was discussed, and the question was raised why he did not blow up the tunnels in the Vosges mountains in his rear, and so delay at any rate the German advance, and their immediate occupation of Nancy and the adjoining country.

'The reply was that the Marshal had given the order to blow them up immediately the retreat was decided upon, and an aide-de-camp was sent to deliver the order to the engineer whose duty it would have been to execute the order.

'Unfortunately there occurred, what might possibly happen at Dover, a difference of opinion. The engineer thought it was not immediately necessary to "destroy such finely executed works," and did not execute the order at once. The tunnels were seized, the possession of the line was made good, and we all know the results.

'It is possible that a few hours, perhaps less than an hour's delay, in destroying "such a finely executed work" as the Channel Tunnel, might produce the same result: the seizure of the Dover end, and the transmission of a sufficient body of troops for the occupation of Dover, supplemented every ten minutes by further relays, until the bold stroke either failed or succeeded. There can be no question that the rapidity of the advance of the Germans was enormously facilitated by the possession of the Vosges tunnels.'

tions. Such men 'impute themselves,' and sometimes fail in consequence, assuming in the interested people who beset them a disinterested enthusiasm like their own. To them appeal can but be made in words as lofty as their own aspirations, and such as have been already quoted from the great poet who loved not mankind less but England more. They may be besought to recollect what the isolation of England, as 'a precious stone set in the silver sea'—as a city of refuge for the oppressed of all nations—has done for the growth of freedom throughout the world, and how clear and cogent should be the call, before the walls—the crystal bulwarks—of that city of refuge should be abolished. The time may come, indeed, for the 'United States of Europe,' as for 'the federation of the world'; but can common-sense lift up its eyes to look across the Channel now and say that such a time is yet 'within measurable distance'? Till it be so, let us trust—and not for our own sake only—to that 'inviolate sea' which has made us and kept us what we are.

The only practical course open to the public in such a case as the present is to make itself clearly heard by Parliament above the clamour and pertinacity of promoters; and to assist in this is the object of the Protest now published.

It is no secret that the professional heads of both Services—the Duke of Cambridge, Sir Garnet Wolseley, and others at the War Office; Sir Astley Cooper Key (the First Sea Lord) and others at the Admiralty—entirely disapprove of the Tunnel projects, though official etiquette may prevent their formal signature against them.

Those who are similarly convinced of the grave mistake which it would be in the present condition of Europe to unite England to the Continent by bonds which, once forged, it might be out of her power to cast off, are invited to add their names to those set forth above.

JAMES KNOWLES.

## A CIVILIAN'S VIEW.

By Professor Goldwin Smith.[1]

The attempt of Lord Palmerston to prevent the construction of the Suez Canal is now universally admitted to have been a mistake. It could not be supposed that Great Britain would be allowed to keep a great highway of nations closed in order to guard her route to India against possible danger. Possibly the same reflection may hereafter be made on the attempt to prevent the opening of the Dardanelles. Not less impracticable have been some of the counsels of a military policy with regard to the defence of distant dependencies. Wellington complained to Peel that the Empire was not fortified; Peel, in reply, requested Wellington to submit a plan for the fortification of the Empire. Even had the plan been submitted and shown to be feasible in itself, the maintenance of fleets on a ruinously expensive scale would have been required to keep open the communications. Perhaps the fancy of fortifying the Empire has prevented our distinctly seeing the real and supreme necessity of securing at any cost the military safety of these Islands. In the same way vague Imperial aspirations have disguised the real and supreme necessity of thoroughly incorporating Ireland. The immunity of the Islands from the danger of invasion has always been, and still is, of paramount importance, not only to their commercial prosperity, but to their political well-being, and not to theirs only but to that of all nations.

It will be admitted that no physical feature of the globe, not even the cluster of little hills by the side of the Tiber, has played a more momentous part in history than the Channel. To feel its importance, we have only to think of the Armada sent to convoy Parma and his veterans over it, or of Napoleon with the legions of Austerlitz standing baffled on its shore. Only by a double accident—the diversion created by the landing of the Northmen in the Humber and the dearth of provisions which compelled the English fleet to put into port—was it prevented from exempting a Saxon realm from feudal aristocracy, and a National Church from Papal domination. In the sixteenth century, and again in the seventeenth, it saved the Reforma-

[1] From the *Nineteenth Century*, March 1882.

tion. In the time of Louis XIV. and the Absolutist reaction it saved liberty. In the time of the French Revolution it saved order. In the time of Napoleon it saved national independence—not the independence of England alone, but that of all nations. By exempting England from the necessity of keeping up a large standing army, it has preserved her from military despotism, and enabled her to move steadily in the path of political progress. It is now the barrier between her industrial people and the conscription, saving her thereby from what would be equivalent to an immense load of additional taxation. A convulsion of nature which should dry it up would be almost as fatal to England as one which should ruin the dykes would be to Holland; and any event which, by diminishing its efficiency as a military barrier, should perceptibly diminish the security which it affords to English wealth, would be a virtual loss of untold millions. For the sake of trade itself, the fortress must be first considered. Any expenditure which its defences really need must be ungrudgingly incurred; and anything, however apparently lucrative, which would render it less impregnable must be foregone. This is not militarism, but commercial prudence. It cannot be said that the Channel, or anything else which conduces to security, interferes with the propagation of ideas: the intellectual isolation of England is already almost a thing of the past.

A civilian can have no opinion about any military question. It seems hardly necessary to dwell, as some military authorities have done, on the danger of passing a defile in face of an enemy; evidently an army thrusting itself into a pipe twenty-two miles long, and capable of being flooded, without having secured command of the mouth, would have reason to repent of its temerity. But it is alleged that the enemy might suddenly and without warning effect a landing in sufficient force to hold Dover for two hours, within which time it might be reinforced through the tunnel. This implies lawless treachery on the part of the invader, but it is a treachery of which the First Napoleon, with such a prize as the conquest of England in view, would have been guilty without the slightest hesitation. The invitation of foreign aid by treason or faction within the realm is happily beyond the range of our worst dreams, though the commandant of Dover would carry the key of England in his pocket. On this point all that is necessary for us to say is that Sir Garnet Wolseley is not a weak alarmist or a professional pedant.

There are some reasons for hoping that war is gradually dying out. We have not for some time had commercial wars like those between England and Holland in the seventeenth century, nor are we likely to have them again, except on a small scale and with barbarous nations, such as China, or with the petty potentates of Africa. Wars in support of the claims of dynasties, such as that of the Spanish succession, and armed litigation between monarchies about

their rights to provinces in Italy or Germany, such as filled the eighteenth century, are also numbered with the past. There are general influences which tend in the same direction. The people, formerly food for powder, are now getting votes, which a regard for their own lives and for the enjoyment of their wages, if not a larger philosophy, will lead them commonly to use in favour of peace. Science is at once rendering war fearfully expensive and divesting it of the glitter and romance by which, after all, it in some measure lived. Perhaps the sight of the North American Continent, so organised under the federal system as to maintain peace within its precincts, and thus reaping the untaxed fruits of industry, may not be without effect on the rest of the world. On the other hand, neither revolutionary wars nor wars of nationality appear by any means to be at an end. German nationality is yet hardly settled, and may have to be once more defended against French jealousy and revenge. Sclavonic nationality is a question evidently fraught with disturbance, and with the possibilities of collisions between great powers. Revolutionary anarchy may again give birth to military despotism, the fell necessities of which were proved by the career of the military despot who began by proclaiming, perhaps not insincerely, and certainly in accordance with his personal interest, that his empire was peace. Conquest itself, and diplomatic struggles for ascendency, have not yet ceased to trouble: witness Afghanistan, Tunis, and Egypt. The craters of communistic volcanoes at Paris and Cartagena still smoke, and other eruptions may be at hand. The mere burden of the military system, when it becomes intolerable, may lead some power to rush to arms as the only means of breaking a long deadlock of ruin. On the pacific influence of commerce rather too much reliance has been placed: nations, like men, are as often governed by their temper as by their interests: moreover, Free Trade does not gain ground, nor is it possible that it should gain ground while the import duties are needed to maintain vast armaments. Arbitration makes way, but its sphere is obviously limited: legal questions such as that of liability for the damage done by the *Alabama*, or a difference about a boundary, it may settle, at least if the wrath of the parties is not violently excited: in questions of national independence or ambition, such as those which led to the Italian and Franco-German wars, it is powerless. Apart from specific causes of quarrel, the war spirit as well as the hunter instinct still lingers in the breast of man. Nor is opinion firmly settled even in quarters where we should expect it to be so. The Free Christian Churches may be reckoned as steady opponents of war, but State Churches still worship the God of Battles. In De Maistre we find a hideous passage describing the earth as a vast altar on which sacrifices of human blood must for ever be offered by the sword; and if Canon Mozley, in his Sermon on War, does not go so far as this, he does in

effect almost renounce for his form of religion the hope of effectually preaching peace on earth.

For the present, then, military security is indispensable: though not the most beneficent of objects, it must take precedence of the rest; commerce must make the necessary sacrifices for it; and if the line of a projected railroad is drawn through the defences of the Fortress, the project must be laid aside.

# A NATIONAL QUESTION.

By General Sir Lintorn Simmons, G.C.B.[1]

It is well known that the promoters of the Channel Tunnel are making the most persistent efforts to get a private Bill through Parliament, to authorise its construction. It is, therefore, of the utmost importance that the public, and especially members of both Houses of Parliament, with whom the final decision will rest, should thoroughly understand the question as it affects the nation at large and its most cherished institutions.

Having some time ago drawn up a memorandum embodying my views on the subject, I have been urged to publish it, and accordingly do so under the conviction that the question is one of the most momentous that can possibly come before Parliament.

The allusions to our neighbours the French are indispensable to the consideration of the question. They are made in the earnest desire and sincere hope that the good feeling—nay more, that the friendship—which has now subsisted for many years between the two nations, and has been cemented by the co-operation of their armies in the field, may last not only for the present generation, but for generations to come; and in the belief that the best and only means, so far as human foresight can provide, for its continuance, is by taking such measures that each nation shall respect the other, and, by making itself secure against attack, preclude the probability of any slight spark of misunderstanding being fanned by the whirlwind of temporary excitement into the flame of war.

## *Memorandum on the proposed Channel Tunnel.*

The objections to the construction of a Channel Tunnel are so great that there can be no doubt the Government ought peremptorily to prevent it.

England may be regarded as an island fortress, unassailable so long as the integrity of the silver streak, its moat, is maintained. This moat *alone*, as I once heard the late Emperor Napoleon say, saves us the burden of a large army raised by conscription such as Continental powers are compelled to keep in a state of constant readiness

[1] From the *Nineteenth Century*, May 1882.

for war. It also has hitherto been considered sufficient, although this sufficiency is questioned by many, to render unnecessary monster fortifications for the protection of the metropolis and other vital points similar to those which all the great Continental powers have been compelled to erect at a cost which would amaze the British taxpayer.

Any interference, therefore, with this moat, which is our true and only line of defence, is to be deprecated.

The passage of this moat is defended by the navy, which during the great French war was equal to that of any two of the maritime powers that could combine against us; but it is well known that at the present moment the fleets of Great Britain are but little superior to those of one power, France;[1] whereas the interests of Great Britain which require naval protection and are of enormous value extend to every part of the world, involving dispersion of force, whilst those of France are comparatively of small value and are concentrated in seas nearer home. If these facts be carefully considered, as well as the uncertainty which must attach to future operations with the complicated machines now used as ships of war, and the absolute certainty and rapidity with which combinations may be made for crossing the moat, it cannot be denied that invasion is much more feasible now than formerly.

Fortified harbours are being made close to our shores at Calais and Boulogne far larger than are required for mere purposes of commerce, which afford matter for reflection as having an important bearing on the question.

If by any mischance—whether from the absence of the fleet in distant seas, from disastrous weather, or as the result of a severe action—the French obtained the mastery of the Channel for a short time, a contingency by no means improbable in war, it would be a comparatively easy operation to disembark 100,000 or more men on our coast.

In this case, the first line of defence having been forced, the second would come into operation. This second line consists of the regular army, militia, and volunteers, unaided by other defensive works than those which might be extemporised on the spur of the moment. Under these conditions, the troops would have their *full work* before them to cover and protect the metropolis. There would, however, always be the prospect and hope that the fleet might re-assert its supremacy in the Channel, and thus cut off supplies and supports, and render impossible the retreat of the invading army.

[1] In support of this statement the reader is referred to the pamplet *Forewarned Forearmed*, by Lord Henry Lennox, M.P. (Ridgway, 1882), whose alarming statements as to the rapidly growing strength of the French navy, as compared with our own, 'have been endorsed by the high authority of Lord Dunsany, Admiral of the Fleet Sir Thomas Symonds, Admirals Sir Spencer Robinson, Sir John D. Hay, M.P., and De Horsey, as well as by other officers of less rank but of great experience and keen observation.'

Let us assume, now, that a tunnel has been made, and consider what may follow. If it could be seized and worked, the invading force would become merely the advanced guard of an army exceeding a million of men, who could overrun the country by sheer weight of numbers. It will, therefore, be essentially necessary that the Tunnel's mouth should be made *absolutely* secure against attack. This, however, will be *impossible*; no fortress can be made impregnable; all that can be accomplished by works of defence is to create delay and defer the day when the assailant, if possessed of adequate means and sufficiently persistent in his attack, must be rewarded by success.

If, however, defences were constructed with this limited object, it would not be just that their cost should fall on the taxpayer; it should be defrayed by those who desire to make the Tunnel for their own pecuniary benefit. They ought also to pay for the additional troops required for their defence, which, unless the army were increased, would cause a material reduction—probably several thousand men—from the forces available for the general defence of the Empire. Were the condition imposed that the Tunnel Company, and not the Chancellor of the Exchequer, should bear the expense of the defences and their garrison, it is not unreasonable to suppose that the scheme would be dropped by its promoters as too costly for construction, and above all for maintenance, and therefore, as the prospect of a dividend would disappear, we should hear nothing more of it. At any rate the public would long hesitate before taking such a new departure in our military system, even were the shareholders ready to risk it, and, after all, the security afforded would be totally inadequate.

The above is based upon the hypothesis of a temporary loss of supremacy in the Channel; but if our island fortress, which scarcely at any time contains provisions for more than four months, could be blockaded, or partially blockaded, so as to interrupt the regular supply of food, the necessities of the population, who might possibly not be all equally earnest in their resistance, would demand a peace. This peace based upon precedent might involve, among other disastrous conditions, the payment of an indemnity, with the occupation of the Tunnel and its defences as a guarantee. In this case, if the surrender of the guarantee at the appointed time were refused, it would be impossible for Great Britain alone, *as at present organised*, unaided by some foreign power like Germany, which should occupy the French army in another direction, to re-establish the integrity of our island fortress.

It is said by some that the Tunnel might be rendered useless by flooding or by other means, and that it will not even be capable of being used, if the mechanical arrangements provided for its ventilation should be destroyed. This is quite true; but it is equally true that it will only be useless so long as the damage is not repaired and

the water not pumped out; and it is not to be believed that a great country like France, with the engineering talent she possesses, and her unlimited resources, could not find the means for re-opening it for traffic within a reasonable time. This operation is not more improbable in the present day than was the lifting of the electric cable in mid-ocean by the comparatively limited resources of a private company five-and-twenty or thirty years ago.

These are the principal reasons which militate against the construction of the Tunnel, and are of such moment that it is not to be conceived that any advantage to be derived from it can possibly outweigh them.

The object of the promoters is financial, as a speculative investment from which they hope to secure a good dividend. To attain it, an appeal is made to the sympathies of those who suffer inconvenience from the passage as now made; to the trading interests of the country, which it is said will be benefited by it; and to the sentimentality of philanthropists, who anticipate from a more rapid and easy communication with the Continent, more perfect fraternisation of the nationalities of the world.

As regards the first, it is to be doubted whether the discomfort of travelling through a tunnel about thirty miles in length would not more than counterbalance that of the present means of transit, to say nothing of the apprehension of danger arising from the knowledge that provision was made, for defensive purposes, for drowning the Tunnel or destroying its ventilation at any moment. In fact, so great would be this apprehension, that it is more than probable that the Tunnel would not be long open for traffic before the public insisted upon being secured against the risk by the removal of the cause.

If the country had found it necessary, either in the interests of passengers or of trade, to procure increased facilities for crossing the Channel, it would long ere this have insisted upon the far more practicable and less costly expedient of making better harbours so that larger ships might be used, having a greater draught of water, which, being more steady and running at higher speeds, would permit of through railway trucks and carriages being run as proposed by Mr. Fowler, and reduce the journey between London and Paris to within a few minutes, probably less than half an hour, of what it will be through the Tunnel.

The public, on the contrary, have taken so little interest in the improvement of the Channel passage that Parliament could not be induced to sanction the extension of the pier requisite to make Dover a sheltered harbour, although pressed to do so on national grounds, the importance of which is much enhanced by the harbour works now in progress on the other side of the Channel.

On a careful consideration of the whole question it is inconceivable

that any Government in England can entertain for a moment a proposal that, by destroying our perfect insularity, will make a breach in the natural defence of our island fortress,—a defence for which we cannot be too grateful to a merciful Providence.

If by means of the Tunnel we become a Continental power, we shall have to accept Continental risks, and ere long be compelled to insure against them by means similar to those adopted on the Continent, viz. by compulsory military service and a standing army raised by conscription to a strength which, while adding enormously to our burdens, would lessen our powers of production and change the whole nature of our institutions.

By Lord Bury.[1]

A writer in the 'Times' the other day complained that, although the great majority of Englishmen are opposed to the construction of a Channel Tunnel, the small knot of speculators who advocate it are so energetic as to convey a very erroneous opinion of their numbers. There is some truth in the remark: the promoters are not only energetic and able, but they are skilled in the use of two weapons which are very effective with British minds. One is the art of advertising, and the other is the use of ridicule. It is well that we should constantly bear in mind that neither can be accepted as a substitute for serious argument.

It is of course easy for admirers of the Channel Tunnel to affect superiority over those who acknowledge themselves to be alarmed at it. There was an old lady, honourably mentioned in 'David Copperfield,' who was extremely fond of tea, but who discouraged, with all the eloquence she could command, the practice of what she called 'meandering:' under this head she classed all distant travel, including the voyage to China. She held meandering to be dangerous and useless, and when reminded that her favourite luxury could with difficulty be procured without adventure in foreign parts, she would only repeat, 'Let us have no meandering.' Sir Edward Watkin and his friends lose no opportunity of likening those who oppose their plans to Dickens's old lady. They give us to understand that though they are themselves superior to human weakness, they are well aware that the race of nervous old women will never fail out of the land, that panic-mongers always have existed, and that, albeit a contemptible race, they must be treated tenderly, because, owing to their numbers, they might otherwise destroy, or at least delay the construction of, channel tunnels and other rational enterprises. 'If you are afraid,' they exclaim, 'that a few score Frenchmen will creep through the Tunnel and capture England, we hold you little better than lunatics for thinking so, but in any case do not allow our confidence to prevent your precautions; pray take means of blowing up the Tuunel with dynamite, flooding it, or pumping smoke into it to choke the invaders. Erect fortifications at the mouth of it if you like, and we will pay

[1] From the *Nineteenth Century*, May 1882.

for them. We are sorry that Englishmen have grown so nervous, and we are astonished that when you see how steam navigation has changed the conditions which affect the insular position of England, you do not see that you are straining at the "tunnel" gnat, while you swallow without alarm the camel "steam."' These are, it will be acknowledged, fair specimens of the half-contemptuous arguments by which the warnings of our best soldiers, sailors, engineers, and statesmen have been met.

There is a class of minds which is readily affected by reasoning such as this, which implies compassion for superfluous fears, and pity for inferior intelligence. It may be shown, as Lord Dunsany in this Review has shown, that the fact of steam having rendered invasion easy is no reason for making a tunnel to make it more easy still; that no one is afraid of an enemy advancing directly through the Tunnel unless he did so as part of a series of combined movements, all of which would collectively be rendered more likely to succeed if the Tunnel existed than if it did not exist.

These points have been argued before, and I do not touch them now except to point out that the tone adopted by the promoters depends for success, not on argument, but on caricaturing and misrepresenting argument.

There is another class, and a more numerous one, which is affected by free tickets, champagne luncheons, and the well-chronicled 'profuse hospitality' of the Channel Tunnel promoters. This form of advertisement has been persistent and continuous, and, truth to say, very successful. I asked a friend, only yesterday, whether he had signed the protest which appeared in this Review against the construction of the Tunnel. 'No,' he replied, 'I have not; I am strongly against the construction of the Tunnel, and I told Watkin so. But he gave a party of us, the other day, an excellent luncheon, and was very civil in showing us everything; so I should not like to do an unhandsome thing to him by signing the protest.'

Exactly so; it is the instinct of a gentleman not to eat a man's salt and then go against him. This 'profuse hospitality,' as the newspapers call it, is an astute advantage taken of generous feelings. The friend of whom I speak is a member of one of the Houses of Parliament; he may not improbably sit on the Committee which will have to judge of the merits of the Tunnel scheme. I am quite sure he will do his duty; but I am also quite sure that it is not fitting that the remembrance of 'profuse hospitality' should add to the difficulties of judges in a cause which materially affects the welfare of England.

There is one point only, among those which I mentioned above as advanced by the Tunnel promoters, on which I ask leave to say a word to-day. The promoters tell us that arrangements can be made for destroying the Tunnel at a moment's notice in case of danger.

Dynamite to blow it up, water to drown it, have been proposed. I do not propose to insist on the obvious fact that dynamite and water might alike prove ineffectual at the moment when they were most needed; that the electric wires connected with blasting charges might be cut or otherwise fail in continuity; that hydraulic pumps might be out of gear or be in possession of the enemy. Passing over that, and supposing—rather a strong supposition—that the Tunnel was absolutely at the mercy of the minister in Downing Street; that, if he said 'Fire the mine,' the Tunnel would collapse,—I ask the question, Would there ever be a moment at which the minister of the day would, could, or should take the responsibility of giving such an order?

When war has been declared and the Tunnel is in the hands of the enemy, the conditions I have imagined would no longer exist. The enemy would have taken his precautions, would have cut the blasting wires, or done whatever was necessary to protect himself. No one needs to be reminded that, the Tunnel being a joint construction of two nations, the holders of either end would be equally acquainted with the precautions, offensive and defensive, of the other; and the possessor of the Tunnel would have, *ex hypothesi*, the means (the Tunnel being in his possession) to prevent its destruction. But there will be a moment before the declaration of war, 'on the first threatening of danger,' as the Tunnel promoters so glibly put it, when it has become unmistakably obvious that the Tunnel ought no longer to exist and is incompatible with English safety. Would any minister dare to destroy it then? Imagine him for a moment sitting in consultation. His military advisers tell him that the decisive moment has come. 'I think, gentlemen,' says the minister, turning to his colleagues, 'that we are all agreed—the Tunnel must be immediately destroyed. Fire the mine!' 'There is one other point,' says the officer, 'on which I request instructions—at what time am I to execute the order?' 'At once, sir; telegraph at once, and in five minutes the blasting charge can be fired.' 'But,' persists the officer, 'trains laden with non-combatants are at this moment in the Tunnel. They enter continuously at twenty minutes' intervals; there are never less than four trains, two each way, in the Tunnel at the same time; each train contains some three hundred persons. War has not been declared—or even if it has, I could not destroy twelve hundred non-combatants without very special instructions.' What would any minister, under such circumstances, do?

A very practical answer to the question is conveyed by the fact that the Germans, during the Franco-German war, advanced through tunnels in the Vosges which were elaborately mined, but, somehow, the moment never arrived for destroying them.

If this difficulty of deciding as to the proper moment for destroying the Tunnel will exist in the time of peace, or during the brief

instant when the issue of peace or war is trembling in the balance, will the proper time for action be found more easily when war has been actually declared?

Assuming, as in the last case, that the minister retains full command of the means of destruction, and that war has been declared; that no successful dash has been made for the possession of the Tunnel; or assuming, if you please, that such a dash has been made and has not been successful, it may be admitted that one brief moment will exist when a British minister might be expected to nerve himself and give his order even at the sacrifice of innocent lives. But who would prefer to trust the whole and solitary chance of salvation for England to the nerve and decision of a statesman, however eminent, when the whole danger might so easily be averted by leaving things as they are, and making no tunnel at all? The moment for action would pass like a flash, and never recur. The time would be one of hurry, panic, indecision, divided counsels. All the difficulties which I have mentioned as likely to prevent decision before the declaration of war would exist as strongly under the new condition. Sir Lintorn Simmons, our greatest engineer, has told us that the greatest danger of the Tunnel is not direct, but consequent. If an army, landed on some part of the coast remote from the Tunnel, should obtain, as it well might do, some temporary advantage, might not the commander of such a force demand, as the price of his withdrawal, or as security for an indemnity, or on one of a thousand pretexts, the possession of the English end of the Tunnel mouth? With both ends in foreign hands an irretrievable blow would be struck at England's power. Till now, our great safeguard against invasion has been, not the difficulty of landing—for there has never been much difficulty about that—but the impossibility of an enemy ever getting home again. That consideration has preserved us hitherto. With the building of a tunnel this safeguard would disappear. As Lord Melbourne said, 'Why can't you let it alone?'

By Major-General Sir E. Hamley, C.B., K.C.M.G.[1]

Those who protest against the construction of the Tunnel may fairly claim to occupy, from the outset, favourable ground in the question, for they can have no private interest in objecting to it; on the contrary, they are opposing those who promise to them, in common with the rest of the public, certain advantages; but these they are willing to forego in consideration of the injury which, as they think, the national interests would suffer.

Without attempting to recapitulate the arguments against the Tunnel, I will mention two which appear to me to be, even if taken singly, decisive. One is that, however slight may be the risk that the Tunnel would be used by an invader, still, as in all cases where a contingency is to be obviated by performing a particular action at a particular time, risk there must be; and the failure to close the Tunnel at the critical moment would entail consequences so grave that no prospective convenience to the public, no advantage to the promoters of the enterprise, can, in comparison with the chance of such consequences, be considered as reasons which ought to prevail.

Nobody doubts that means may easily be devised by which egress from the Tunnel on our side *could* be prevented. The question is whether it certainly *would* be. Apart from the chances of failure which cannot but exist in any plan of the kind, however complete the safeguards against failure may appear to be, and which it would be premature at present to consider, there is one kind of precaution open to the enemy which has already been practised in a somewhat similar case. When the Germans in their late invasion of France desired to transport their troops by a French railway through a hostile district, where preparations to attack or upset the train might certainly be expected, they placed some French official of distinction on the engine. The measure was found to be effectual, and the trains, thus secured, formed safe means of transport for the Germans. And however perfect might be our measures for blowing up or swamping the Tunnel, however trustworthy the persons charged with the execution of those measures, however thoroughly the officer who was to give the word might be convinced that the moment for giving it was

[1] From the *Nineteenth Century*, May 1882.

come, still he might well be expected to pause if suddenly certified that he would be destroying, along with the enemy in the Tunnel, some highly important Englishmen. I am not aware that this consideration has been suggested before, but it seems to me to present a kind of risk which it would be especially difficult to guard against.

The other of the two arguments adverted to above as decisive is this: If an invading force be thrown on our shores, it must be during the temporary withdrawal of our fleet, a condition which Napoleon contemplated as indispensable when planning an invasion. Supposing such an event to take place when no tunnel exists, the return of the fleet would limit the invaders to the supplies which they might have brought with them, when their position, in presence of any respectable organisation for defence, would be so precarious that the prospect of it might well prevent the enterprise. But if the enemy could hold an underground thoroughfare into the country, the fleet would return in vain, and we might experience the unheard-of mortification of seeing our ships dominant in the Channel and yet unable to protect our own shores—a mortification infinitely aggravated by the reflection that this condition of affairs was the consequence of our own voluntary act.

There is still another consideration, which has not yet, I believe, been suggested, and which it is repugnant to contemplate. Hitherto the primary condition in arguing for the possibility of the Tunnel being used against us has been the landing of an enemy's force on our shores. But have we no domestic foes who might count for something in the matter? Are there not home-bred adversaries among us who make a boast of their hostility to England and its institutions, and who would certainly be ready to combine with a foreign enemy to overthrow them? Would the existence of the Tunnel give no fresh advantages to treason, afford no new grounds for fearing mischief from those whom it is our pleasure to tolerate among us as if they were ordinary politicians, the advocates only of some open question of domestic policy? It will be sufficient, perhaps, merely to draw attention so far towards this unpleasant element of the case. It is not difficult to imagine a combination of circumstances that would give sudden importance to the highway through which hourly communications with France were proceeding, namely, a line of policy adopted by that country, amid the many shiftings of continental diplomacy, which would threaten us with imminent war, and a traitorous faction still unsuppressed in the midst of us.

Such then, it appears to me, are among the chief of the reasons which present themselves against the construction of the Tunnel. On the other side the advantages claimed for it are that more assured amity with France will result from increased facility of communication—an assertion which, being supported by no proof, may be met

by simple denial; greater comfort in transit; passage to the Continent without change of conveyance; and expected profits to certain shareholders. It must always be an unpleasant task to endeavour to frustrate an enterprise in itself spirited and ingenious, and I will therefore add nothing at present to this statement of the case, which, however, I venture to present, though it places me among those whom Sir Edward Watkin charges with 'ignorance and littleness'—ignorance in not viewing the scheme as he, the chairman of the Tunnel Company, views it, and littleness in not holding the balance as he holds it between the gains of private speculators and the interests of the nation.

By Lord Dunsany.[1]

To one whose object is to warn his countrymen of an impending danger adverse criticism does not appear very serious; yet, that an apparent inconsistency may not prejudice the argument which will be urged in this paper, I would forestall the question why one who has spoken of the 'Silver Streak' as no longer affording protection, should attach any importance to the compromising of our insular position by a dry land communication with the Continent. In this there is no consistency. If I am right, and there is danger to a nation which, having a doubtful naval superiority over its nearest neighbour, is persuaded that it can defy any probable combination of foreign powers, then this danger will be immensely increased by the establishment of the proposed route. If I succeeded in showing that a force sufficient to march upon London could be landed upon our southern coast, how much more easy would it be to land a force to hold the Dover end of the Channel tunnel for a few hours, during which regiments would be brought up by each line at intervals of five minutes. If an attack by sea would have a fair chance of success, the danger is not decreased when with it may be combined an attack along an even more expeditious route; a route, be it remembered, which has this peculiarity, that it can only be assailed at either end. Let a small force occupy the outlets, and they need not trouble themselves about the line of communication.

If, on the other hand, I am wrong, and there is some magic in the 'silver streak' which makes it for ever impassable to our enemies, then surely that which breaks the spell cannot be tolerated. If, in spite of any unwisdom, apathy, or parsimony upon our part, an invincible navy will always appear whenever and wherever we may want it, let us not construct a route whereby it may be eluded. Let me then not be accused of inconsistency if I discuss the additional danger of an additional route.

We are, it seems, if certain commercial projectors succeed, to have a dry land communication between this island and France. Engineering science has pronounced it practicable, the projectors have decided that it will pay, and the work has even been commenced

[1] From the *Nineteenth Century*, February 1882.

in a tentative form. What effects would be likely to ensue upon its completion might be considered upon social, political, commercial, or military, including of course naval, grounds. I propose as far as possible to confine myself to these last, and it may give some value to these pages, that I am enabled to quote the opinions of a military authority occupying the highest position in the estimation and favour of the country.

At the outset I would endeavour to dispel a delusion with which many have been content to deceive themselves. The very prevalent belief that our shores are permanently safe-guarded by the seas does not of course attribute to our seas any peculiar property by which they are made less the 'highway of nations' than those which surround other lands. There is a tacit assumption that we possess a navy which, if not a match for all others put together, could at least beat the combined fleets of any two or three Powers. As a matter of fact we have no such navy; we have not had such a superiority since the early days of Louis Philippe, nor, from the nature of our institutions, is there any reasonable ground for supposing that we shall have it again. It is more consistent with fact to say that our navy is on an average equal to that of France, but very inferior to that of France combined with any other maritime Power. The battle ironclads built or building in England number thirty-eight. Those of France in the same category are equal in number, but somewhat superior in offensive and defensive power, and also in speed. This may be disagreeable to admit, but if we may believe our own best naval authorities, or the verdict of a competent and independent foreign writer on naval matters, it is true. A rather amusing confirmation is given to the old saying that 'facts and figures can be made to prove anything' by recent correspondence upon this question, in which, according to the views of the different writers, thirty-eight English ships greatly outnumbered, or fell far short of thirty-eight French ships. But the popular misconception of the primary fact upon which our present security is supposed to rest may well make us cautious in anticipating the result of the entirely new condition of things which a Channel tunnel would bring about.

The dangers of a novel route for hostile invasion must be calculated upon purely military considerations. But while technical knowledge is required to estimate the military value of the proposed tunnel, there is one consideration that comes home to us all. The commercial merits of the scheme I do not propose to discuss, I am content to accept the assurance of its promoters that it will pay; that is to say—that it will pay its shareholders. But will it pay England?

If the tunnel is made, even its warmest advocates must confess the necessity of such fortifications as shall secure to us the possession of our end of it. These fortifications must be sufficient to render a surprise or an escalade by a small force all but impossible. They

must always be kept in the highest state of efficiency, and should be garrisoned by picked troops. The eminent authority from whom I shall quote points out that foreign powers put the cost of fortifications required to guard the mouths of tunnels piercing mountain frontiers upon the companies which construct the tunnels. In the case of the Channel tunnel it seems that the taxpayers of this country will have to pay the shareholders' piper. And be it remembered that these shareholders will not necessarily be all, or even mostly, Englishmen. Capital knows no country. A demand for shares on the Paris Bourse will cause them to gravitate thither. Any anticipation of interference by the Government which should depreciate the shares in the English market would facilitate this movement, while the Suez Canal shares exemplify another possibility.

Nor, though I do not wish to discuss the political bearings of the proposed scheme, can I entirely pass over the fact that if this tunnel were made we could not be the sole rulers of its destinies. A demand would soon arise, and perhaps first from a certain school of politicians among ourselves, for the 'nationalisation' of the tunnel. It would be on the highway of Continental and Transatlantic traffic, and a question would arise which might bring fresh difficulties upon our backs.

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I would suggest another consideration to those who do not accept the proposed scheme upon such slight grounds, but who believe that all danger will be met by the fortification of our entrance to the tunnel. It is not safe in England to assume that we shall do a thing because we agree that it is of even paramount importance, or that if we commence a public work it will be finished within a reasonable period. Much would depend upon the Budget, the state of political parties, or the popular fallacy of the hour. There would not be wanting those who would declaim against the necessity for any fortifications. In 1851, the year of the first International Exhibition, the dawn of a millennium was the war-cry of the peace party. All military inventions were excluded as barbarous anachronisms, and so fatuously did some believe in the installation of perpetual peace that six colossal wars have hardly persuaded them of any error in their calculations. But as we now stand in presence of an armed Europe, of Powers whose soldiers are counted by millions, let us suppose that it is decided to erect the necessary fortifications. If we may judge from the past, and take Lord Palmerston's fortifications of Portsmouth, Plymouth, &c., as examples in point, we should contract for the completion of the works within some ten years. They would not take less. (The Spithead forts, which were decided to be of vital necessity, have been more than twenty years in process of construction, and are not yet completed.) A sub-contract with Providence for security during that time would

be desirable: but let us assume that the works have been successfully completed—how should we stand then?

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Optimists may consider the friendship of England and France as assured; let us earnestly hope that it may be so; but it were blindness to overlook the fact that with no country have we so many points of contact which might engender burning questions. At the present moment our friendly co-operation with France in Egypt may be compared to the proverbially difficult task for two men to ride one horse, neither being behind. If we get on amicably it is because on the one hand we claim political superiority, which we imagine that we can assert, and that, on the other hand, France is perfectly determined that we shall never reduce this imaginary claim into a reality. As we consider our contingent right to a prevailing voice in Egypt to be a vital necessity, this implies sufficiently critical relations. Nor is it in Egypt alone that rival pretensions somewhat strain the friendly understanding which all Englishmen desire to maintain. Hardly a week passes in Newfoundland without the temper of our authorities being somewhat severely tried by the overbearing conduct of some French naval officers.

Granted that peace may, as I trust it will, be maintained for many years, it is a great element in its preservation that nothing would be gained by a rupture, while *vice versâ* the prospect of an enormous though uncertain advantage would constitute a danger.

To revert to the actual facilities for invasion afforded by a submarine tunnel, the English end might perhaps be protected in a military sense by the fortifications of Dover.

It is a very striking illustration, however, of the difference between a real and a delusive security, that Dover as against a modern fleet is a very contemptible defence.

Most people, no doubt, imagine that the nearest point to France, the fortress which seems to invite attack, and in the first Napoleon's time might have defied it, has some real strength beyond what nature gave it. Feeling some interest in the point, I closely examined the fortifications and artillery of the famous fortress three years ago. Not being in Alsace-Lorraine nor in France, I carried my note-book in hand, jotting down my observations. The general result was that the guns, generally speaking, were of an obsolete pattern—popguns, in fact. One among them, in a very commanding situation, attracted my attention from its superior size and modern appearance. Remarking upon the fact, I was told by an artilleryman that there were orders against firing it, as it would bring down the brickwork of the rampart. Briefly, from the old Norman citadel to the lowest battery there was not one single armour-piercing gun, nor do I believe that, excepting the two guns in the iron turret on the pier (if they are mounted now), have any been added. To place the significance of

such a fact in a strong light, if we suppose that in a freak of madness the captain of a foreign ironclad had opened fire on our frontier fortress, the only fort between Calais and London, he might simply have knocked it into a heap of rubbish from behind his own armour without the loss of one life. If the nation is prepared to pay the cost of such fortifications as may to some extent neutralise the danger created by the new route, it should take care that the fortifications are finished and armed before this route is opened. The precaution once deferred may not be taken in time. One other observation I must be allowed to make, namely, that while in all that regards the army and operations upon land I gladly defer to the high authority whom I quote; upon the naval question of the possibility of landing such a force as could strike a blow fatal to English liberty I can only agree with him when we possess such a fleet as he assigns to us. That confidence in our silver streak, which was once a true creed, has become but a superstition. That naval supremacy upon which it depended is no longer ours; there remains but *magni nominis umbra*.

## AN ALTERNATIVE.[1]

By John Fowler, C.E.

The majority of persons who leave their island home of Great Britain for the continent of Europe are deeply interested in the mode of passing over, or under, the waters of the Channel. The proposal which has lately almost monopolised the attention of the public has been a passage under the waters by means of a Railway Tunnel. It is true the contingencies inseparable from such a work are great, but the contingencies do not much interest the general public, who deem it to be the business of promoters and shareholders to deal with any financial, constructive, or other difficulties which may arise. Opinions, professional and otherwise, have always differed respecting the feasibility of carrying a tunnel under the bed of the Channel. The prevailing opinion of experienced engineers is that, provided sufficient capital were forthcoming and sufficient time afforded, the tunnel might possibly be completed, though no responsible engineer would venture to predict its accomplishment as a certainty.

The preliminary and experimental work of boring a short driftway has been in operation for some years, during which time the attitude of the British public has been on the whole that of patient indifference, with occasional expressions of utter unbelief. Of late, however, a great change has taken place in this attitude, partly from the conviction that the tunnel and its promoters have stood for ten years in the way of any important improvement in the Channel service, but chiefly from the danger to the safety of England which it is apprehended might result from its construction.

It is an obvious condition of the tunnel project that the Governments and people of the two countries to be connected by it should be strongly, if not unanimously, in its favour. Without this approval such a work ought not to be proceeded with, even if the capital had already been obtained for the purpose. So far, however, as can be gathered from the usual sources of information, a strong feeling of distrust and dislike has grown rapidly since the serious dangers to which the tunnel may contribute have been clearly brought before the public. On this point I will quote the recent weighty words of one of our

[1] From the *Nineteenth Century*, March 1882.

greatest military authorities, whose views are well known to be held alike by nearly all naval and military men who have carefully considered the question. 'The tunnel,' he remarks, 'would introduce a new and very serious element of danger into the problem involved in the defence of England against invasion.' . . . . 'War and every operation connected with it, whether by sea or land, is made up of accidents: how often have we not seen the torpedo fail to go off, the shell to burst, the most carefully contrived mine to explode, and the galvanic battery and fuse to act! Soldiers and sailors know all this, and therefore dread to stake our national safety upon any such plans or mechanical contrivances (for destroying the tunnel in case of invasion); but where they, through their experience and knowledge of the danger, fear to travel, the projector and speculator are prepared to rush blindly in.'

That soldiers and sailors are not alone in their dread is evidenced by a recently published letter of Mr. E. A. Cowper, a Past President of the Institution of Mechanical Engineers, whose ingenuity and powers of invention no one will dispute. He writes: 'Some years since I had occasion to make calculations in relation to an engineering question connected with the proposed tunnel, and considered the subject a good deal. I attempted to design arrangements by which the tunnel might be made safer by its being stopped, or flooded, or blown up in an instant, if necessary, but I confess that I was not in any way successful in my attempts.'

Objections of this character by military and civil authorities will naturally and properly have great influence on public opinion, and when once the possible dangers pointed out have been fully realised, the further prosecution of the tunnel works will become an impossibility.

Those who recall, with a shudder, their sufferings in the present Channel steamers, will probably fear that relief by other means cannot be found for their miseries. Fortunately, however, this is by no means the case, as we shall presently see.

It would be idle to speculate as to the author of the first proposal for crossing the Channel by means of a tunnel. No engineering project can be simpler—on paper—since it is only necessary to draw a straight line on a chart, make a cross-section of the Channel, showing the depth of water and the position of the tunnel below the bed of the sea, and the thing is done. One of the earliest proposals for a tunnel was by M. Matthieu, a French engineer, who submitted elaborate plans to Napoleon Bonaparte, then First Consul, in 1802. These plans were publicly exhibited in the Luxembourg Palace for some time, but have unfortunately been lost. Various other French proposals have appeared from time to time. In 1856, M. Thomé de Gamond, after a series of geological investigations, worked out a scheme for a tunnel, to be constructed by sinking shafts through

thirteen islands artificially formed in the line of his proposed railway, and thence driving right and left in the ordinary manner of a tunnel on land. This scheme was referred to a scientific commission by order of the French Emperor, who suggested further investigations by shafts and short headings at the expense of the two Governments, but the matter appears to have proceeded no further. Numerous other French projects evidence the fact that the fascinating problem of a submarine tunnel received much consideration from French engineers before any attention was bestowed upon it by English engineers.

It is significant to observe what a large proportion of submerged tubes of some kind or another have been proposed by engineers of great experience, who evidently were of opinion that the ordinary and apparently easy course of driving a tunnel under the bed of the Channel involved in reality greater contingencies than their own admittedly novel and untried submerged tube method. Mr. Bateman, a Past President of the Institution of Civil Engineers, proposed to traverse the Channel by means of cast-iron tubes 13 feet in diameter and 4 inches thick, not floated out in long lengths and sunk, but constructed by adding successive 10-feet portions to the ends, under the protection of a horizontal sliding cylinder or working chamber 80 feet in length, to be advanced by powerful hydraulic rams.

Mr. Zerah Colbourn, an American engineer, suggested the adoption of a cast-iron tube lined with brickwork, to be built in a dry dock on the English coast, each day's work being hauled out, so that space was left in the dock to add further lengths, until 20 miles in length of tube or tunnel was floated out and submerged. The tube was to have been maintained sufficiently clear of the bottom, to obviate risk of its grounding, and thereby resisting the tractive action of the numerous tugs, which this remarkable sub-aqueous ship 20 miles in length, and 18 feet in diameter, would require for towage. Quite recently, Mr. Bradford Leslie, an experienced and distinguished Indian engineer, published a pamphlet descriptive of an iron tubular tunnel to be submerged to a certain depth below the surface, and retained there by opposing forces—the buoyancy of the tube, and the anchorages securing it to the bottom of the Channel. Innumerable schemes have been suggested by individuals of various callings, for iron tubes simply bedded on the bottom of the Channel, to be silted over, it was assumed, by the action of the tidal current.

There was clearly one point in common in all these projects, and that was the desire to avoid the danger of utter destruction which must befall an ordinary tunnel driven under the bed of the Channel, if, through fissures or otherwise, an influx of water over-mastered the pumps. At such depths, neither divers nor pneumatic appliances could be employed, and the tunnel would

have to be abandoned, although it might have been completed within a few yards of the opposite shore.

So great a weight has always been attached to tunnel contingencies that many persons have proposed, as a less risky alternative, the erection of a bridge across the Channel. A wild project of a M. Boutet, an adventurer of no engineering experience, was carefully investigated by the late Emperor Napoleon. Large models were made, and it was warmly advocated in France; but the objections to any bridge scheme were obviously too numerous and important for any influence, however great, to overcome. It is not probable that any projects for bridges, or for pipe tunnels, either floating below the surface, or resting on the bed of the Channel, will be again revived.

My own attention was first seriously directed to this question of Channel communication in 1862; but for reasons which, to my mind, apply as forcibly in 1882 as they did twenty years ago, I decided to waste neither time nor money upon tunnel projects of any kind, and addressed myself to the less visionary alternative of large ferry steamers. In 1864, 1865, and 1867, assisted by Mr. William Wilson, C.E., I made surveys of the coast on each side of the Channel, and deposited plans for improved works at Dover, with a view to steam-ferry navigation; but the Admiralty and the Dover Harbour Board saw difficulties in the proposal, which prevented further progress at that time.

About the year 1867, Mr. Low, a well-known mining engineer, submitted to me a carefully considered project for a tunnel, and as he had the good fortune to have Lord Richard Grosvenor as a supporter, I acceeded to his request to reconsider my anti-tunnel views with reference to this special tunnel proposal; but again, and finally, I declined to associate myself, as engineer, with any tunnel scheme. Sir John Hawkshaw took a more sanguine view of the proposal, and acted for some time with Mr. Low as joint engineer to the work.

In 1870, in conjunction with Mr. Abernethy, as joint engineer, and the late Mr. Ward Hunt as chairman, I submitted to the consideration of Parliament plans for a harbour on the western side of the Government Pier at Dover. The Bill for this work was passed in the House of Commons, but withdrawn in the House of Lords. In 1872, an amended, and much more comprehensive plan, embracing a harbour of refuge on the eastern side of the Government Pier, was also sanctioned by the House of Commons, but rejected by the casting vote of the Chairman in the House of Lords.

The plan last referred to is all that I need now describe, as nothing has happened during the past ten years to change the views which I then entertained as to the proper mode of dealing with the difficult problem of Channel transit.

My Channel Ferry project may be, perhaps, shortly described as a project for the establishment of huge floating railway stations, which would traverse at a high speed the distance between the English and French coasts. That is to say, a continental train from Victoria or Charing Cross would run into an ordinary first-class station at Dover, and then straight ahead on to and between the decks of a very large ferry steamer. To give effect to this scheme it is clearly necessary that still water should be secured for the steamer whilst loading, and the varying range of the tide provided for by some mechanical contrivance. The first desideratum was to have been attained by the prolongation of the present Admiralty Pier, and the construction of a new one on the east side to inclose about 95 acres of water, and the second by suitable hydraulic platforms or hoists capable of raising or lowering an entire train to the level of the deck of the vessel. The ferry steamers were to be not less than 450 feet in length, 57 feet in beam, and 12 feet in draught, and it was calculated that, with 10,000 indicated horse-power, the speed would exceed 20 miles an hour. Two lines of rails were to have been laid along the lower deck of the steamer, on which the passenger carriages would remain in complete shelter, with platforms, waiting and refreshment rooms, and the other conveniences provided in stations ashore. On arrival in harbour on the French side, the train would be disembarked by the aid of hydraulic appliances, and proceed direct on its way, the total saving of time being estimated at not less than two hours, as compared with that occupied under the present arrangements.

During the elaborate investigation before the Committees of both Houses the important question of conveying carriages and trucks by the large steamers was fully considered, and also the speed and size of the vessels to be employed.

Sir E. J. Reed, C.B., M.P., the late Chief Constructor of the Navy, was of opinion that 'If you know beforehand that you are going to carry trains you can make the vessel just as perfect as if she had no trains. . . . . Twenty-three miles an hour is perfectly practicable as proposed.'

Mr. Joseph d'Aguila Samuda, one of our most experienced ship-builders, remarked, 'I do not think that putting trains on board would in any way whatever damage the character of the vessels as sea-going vessels.'

Sir William G. Armstrong, C.B., now President of the Institution of Civil Engineers, said, 'I have made myself acquainted with the details of Mr. Fowler's proposal. I think it is a very practicable thing, and the scheme is less speculative than any others which have been proposed.'

Mr. T. E. Harrison, the Chief Engineer of the North Eastern Railway, remarked, 'I have no doubt at all that the plan, as here

devised, of running the whole train on to a gangway which would be lowered by hydraulic power, is a most perfectly simple operation, and reducible to the greatest nicety, and I am quite satisfied if any person arrived there and were asleep in the carriage he would be put on board without knowing anything about it. . . . . The tunnel might perhaps be done, but the chances are that you would find such difficulties that you could not complete it.

The great length and great beam, and the special design of the vessels, secures a minimum of pitching and rolling, and with the short 'choppy' seas of the Channel the motion of such vessels would be exceedingly slight. On this important point, Sir E. J. Reed remarked in his evidence in 1872: 'I think that in a vessel of the dimensions contemplated by Mr. Fowler, and with proper designing, you would get a vessel of almost unexampled steadiness.' This view was confirmed by Mr. John Laird, who said: 'The motion caused by such a sea as there is between Calais and Dover would have very much less effect upon vessels of this large size than upon small vessels; and I am also of opinion that the great speed of these vessels would tend much to reduce the motion of the vessels, as, passing from one wave to another with great swiftness, the action of one wave to some extent would counteract the effect of the other. I feel satisfied, so far as I am able to form an opinion, that there would be no engineering difficulty in carrying out that part of the scheme.'

With regard to the harbour, Mr. Lyster, the Engineer in Chief of the Liverpool Docks, and a very high authority on harbour works, said, 'I think there will be an admirable harbour formed under the powers included in the Bill, as well as sheltering the existing harbour and the northern face of the Admiralty Pier, which is now exceedingly exposed to any weather from north to east. . . . . The effect on the port of Dover would be to shelter the harbour, and make a very convenient roadstead for vessels to bring up in before entering the harbour.'

Sir James Anderson, formerly Captain of the 'Great Eastern,' Captain Sherard Osborne, Captain Halpin, and Vice-Admiral C. Robinson also spoke to the perfect practicability and value of the proposed Channel Ferry.

Ten years have passed away since this evidence was given, or more than twice the time necessary for carrying out the complete harbour and steam through communication scheme then proposed, and during these ten years hardly anything has been done to ameliorate the sufferings of passengers. The opinions already cited show that from the first no unprejudiced practical engineer or seaman entertained any doubt as to the feasibility of putting trains on board, and carrying them across the Channel with safety and despatch. For goods steamers the arrangements are easily managed, as the

problem is simply to place the greatest possible number of trucks in and upon each vessel to secure the maximum economy. For passengers, the arrangements must necessarily be more elaborate. By every train the mail and uggage vans, and the ordinary and invalid carriages would be taken through to their destination in Paris or elsewhere, and as a rule the luggage would be examined during its transit across the Channel in commodious rooms provided for the purpose, so as to save the traveller the delay and annoyance of examination in Paris or London.

Some objections have naturally been made to the proposal, but chiefly by those who have never taken the trouble to understand the details of the scheme. For instance, it has been suggested that the train if placed on deck would be exposed to wind and weather, and be altogether disagreeably situated. No doubt; but the train as already described would not be placed on deck, but carried under the upper deck, and be protected as in any other first-class station. In default of better arguments it has been attempted to ridicule the system by suggesting that as passengers would probably leave their carriages during the Channel crossing, the transit of the carriages would merely be for the accommodation of the umbrellas and rugs, which would be their sole occupants. Such an argument hardly needs refuting, for it would apply equally to the whole system of through carriage accommodation, which has been so laboriously built up during the last quarter of a century in England and abroad. Passengers leave the train at York to dine, but they retain, and highly esteem the comfort of the through carriage provided for their whole journey, and in the case of the Channel Ferry the arrangements and advantages would be precisely the same. Experienced railway managers are fully alive to the value of providing through carriages and all possible conveniences, for competitive traffic, and they know how trifling a matter turns the course of a traveller along one railway or another. It would, I think, be difficult to exaggerate the comfort which would result from the ability to secure a seat at Charing Cross or Victoria stations, especially when ladies and invalids are concerned, with the knowledge that there will be no disturbance, no hunting about at Calais or Boulogne in the dark, and no separation of family parties, or necessity to mount into carriages with unknown occupants.

In the event of the ferry project being carried out, the lines of the South Eastern, and London, Chatham, and Dover Companies would be brought together into one central station at Dover, in a position giving very convenient accommodation for the town, and at which every through continental train would stop, whilst with the tunnel scheme no such convenient station for Dover would be possible, as the descent into the earth must necessarily commence far away from the town. Opponents of the Channel Ferry project—ten years ago—offered the public two alternatives, namely, the construction of

a tunnel, and the establishment of steamers somewhat similar to those on the Holyhead station. Since the date of my last application to Parliament, several attempts have been made to improve the communication by means of a better class of steamer, but these attempts have been comparative failures, as I anticipated, for want of proper harbours.

Sir Henry Bessemer's clever and bold attempt to mitigate the sufferings of passengers, by means of a swinging saloon centrally placed in a large steamer, will be fresh in the memory of all; and it will not be forgotten that the large ship proved so unhandy that on her trial trip (in May 1875) she knocked down about a hundred feet of the Calais pier. The 'Bessemer' steamship was, as regards length, beam, and horse-power, as large as the majority of ocean-going vessels, but her draught was comparatively small, and steadiness in a heavy sea cannot be obtained with a very shallow draught of water. Her length of 350 feet, combined with special construction of her bow and stern, secured practical immunity from pitching, but her beam of 40 feet was not equally efficient to prevent rolling.

No less sanguine expectations were entertained with respect to Captain Dicey's novel system of twin steamers. The first of them, the 'Castalia,' was 290 feet long by 60 feet wide over all, the two hulls, or rather half-hulls, being 17 feet wide, and spaced 26 feet apart. On trial, the speed of the 'Castalia' proved to be so slow as to practically exclude her from the continental service, and consequently another twin-ship, the 'Calais-Douvres,' was built. This vessel was 300 feet long by 61 feet wide, but, instead of two half-hulls, she had two complete hulls spaced 25 feet 6 inches apart. The draught of water was 6 ft. 8 in., the horse-power 4,200, and the speed only 14 knots.

Both the 'Calais-Douvres' and the 'Bessemer' had engine power in excess of that of the great troop-ship the 'Serapis,' which vessel is 360 ft. long by 49 ft. beam, with a draught of 21 ft. 6 in., a displacement of no less than 5,800 tons, and a speed of 14 knots. In other words, if the harbours could receive her, this steady ocean-going deep-draught troop-ship would perform the Channel passage in the same time and at the same cost as either of the two recent shallow-draught novelties. I claim, therefore, that experience since 1872 has entirely justified my contention before Parliament that the first step towards improved Channel communication is the construction of adequate harbours.

It will probably be alleged, and with perfect truth, that whatever may be the harbour accommodation required at Dover on the English coast, works of a similar character will be required at Calais or Boulogne, or both, on the French coast, So far from this being an objection, I consider it one of the many advantages in the ferry system as compared with the tunnel, because both

countries alike would profit from the establishment of these harbours of refuge, and a saving of life and property would result. No undue temptation would be given to aggression, and no permanent destruction of harbour works could be effected in the event of a war.

As regards the possible evils to which the tunnel might give rise in case of war, I will add nothing to the opinions I have quoted, but will content myself by reiterating the conclusion arrived at by me in 1862, and of the reasonableness of which I and my colleagues satisfied Committees of the House of Commons in 1870 and 1872, that if intercommunication by the unbroken continuity of vehicles between England and the Continent be desirable, of which there can be no doubt, those objects can be obtained by ferry steamers at a fraction of the probable cost of a tunnel, even assuming the latter to be practicable, which is by no means proved, and that the necessary harbours would, undoubtedly, be a great convenience and safeguard, and could in no possible way be a source of danger to England.

## CONCLUDING PARAGRAPHS FROM THE REPORT OF MILITARY COMMITTEE.[1]

In conclusion, your Committee have now only to record their answer to the question :—

How far will these proposals, 'beyond any reasonable doubt,' secure 'the use of the tunnel in every imaginable contingency' being 'denied to an enemy'?

In their opinion the application of the principles and measures adopted by them should, with that amount of intelligence, fidelity, and vigilance which the State has a right to expect from its servants, effect this; but it must always be borne in mind that, in dealing with physical agencies, an amount of uncertainty exists which can never be wholly eliminated, and that it is equally impossible to eliminate human fallibility.

It is only by the multiplication of means, which can be placed under the control of independent authorities acting from different localities, that this element of uncertainty can be to the greatest extent minimised, and these considerations your Committee have steadily kept in view in the recommendations which they have made. But they cannot disregard the possibility that a long period of peace and uninterrupted tranquillity might engender carelessness in maintaining in good working condition the arrangements applied to the partial or complete destruction of the tunnel, and might lead to fortifications being

[1] From Channel Tunnel Correspondence, p. 258.

left so inefficiently armed or insufficiently manned as not to be secure against surprise. They therefore desire to record their opinion that it would be presumptuous to place absolute reliance upon even the most comprehensive and complete arrangements which can be devised, with a view of rendering the tunnel 'absolutely useless to an enemy' 'in every imaginable contingency.'

A. ALISON (MAJOR-GENERAL, PRESIDENT).
CHARLES HUTTON GREGORY (PAST PRESIDENT, INSTITUTION OF CIVIL ENGINEERS).
T. L. GALLWEY (LIEUT.-GENERAL, INSPECTOR-GENERAL OF FORTIFICATIONS).
J. STOKES (COLONEL, R.E., DEPUTY ADJUTANT-GENERAL, R.E.)
ANDREW CLARKE (COLONEL, R.E., COMMANDANT SCHOOL OF MILITARY ENGINEERING).
E. GRAVES (ENGINEER-IN-CHIEF, GENERAL POST OFFICE).
H. J. ALDERSON (COLONEL, ASSISTANT DIRECTOR OF ARTILLERY AND STORES).
V. D. MAJENDIE (COLONEL, HER MAJESTY'S CHIEF INSPECTOR OF EXPLOSIVES).
F. A. ABEL.

## OBSERVATIONS BY HIS ROYAL HIGHNESS THE FIELD-MARSHAL COMMANDING-IN-CHIEF.[1]

Horse Guards, War Office, *June 23rd*, 1882.

Sir,—In your memorandum of May 26, you inform me that the enquiry into the Channel Tunnel schemes has now reached the stage at which Her Majesty's Government would be glad to receive my views on the strategical and military aspects of the question.

Accompanying your memorandum are all the papers on the subject from the first enquiry in 1874-5 to the report of the Scientific Committee, presided over by Sir A. Alison, which is sent forward with a covering letter of the Surveyor-General of the Ordnance.

It appears to me that the correspondence which took place in the year 1875 has very little importance from the strategical and military aspect. To quote the words of the Solicitor of the War Office on April 23, 1875, the Committee which then dealt with the question was 'formed without any element of that which, in an English point of view, is the essence of the scheme—viz. its effect on the Insular Position of Great Britain in relation to National Defence.'

I cannot, therefore, express too strongly my satisfaction that, whilst that all-important matter remained in the background, the country was in no way committed to any definite engagement either to France or to any body of promoters; that even in the drafts of proposals for sanctioning the Tunnel Company, it was stipulated that no scheme should be valid until it had received the sanction of the Legislature of both countries; that no Act was passed at that time by our own Legislature, and that the only Bill which the Company were permitted by the Treasury to proceed with without objection was one for acquiring land for the purpose of experiments.

The Act which was passed in 1880 appears to have been entirely disconnected with the previous discussion, such as it was, which took place in 1875. The Act simply permitted Sir E. Watkin's Company to acquire land west of Dover for the purpose of experimental borings. Sir E. Watkin's Company was not in existence at the time of the previous discussion, so that this permissive Act can in no way

[1] From Channel Tunnel Correspondence, p. 299.

have committed either the Government or the House of Commons to any further sanction of the general scheme, which had remained in abeyance since 1875, under the conditions I have already referred to.

The Board of Trade inquiry of 1881–82 had no pretensions to deal satisfactorily with this question from the larger point of view. Very important evidence was, no doubt, tendered before it, but it is clear from the Minute No. 5 of February 3, 1882, that the Committee felt that the subject, on its national side, was not one with which they could adequately deal.

I am convinced that the small amount of evidence which was taken in regard to the military aspect of the question does not at all fairly represent the balance of military opinion on this subject. There is, I believe, very nearly unanimity amongst those officers on whose judgment I should myself be disposed to rely, but this large consensus of military opinion found expression before the board only in the evidence of the Adjutant-General, who was one of the only three military officers examined.

The subject is one which can hardly be treated adequately except at greater length than I should wish that this paper should reach, and I have, therefore, ordered that a compilation should be made of the elaborate statements of the case put forth in various papers by Sir Garnet Wolseley, and with regard to any of the more detailed points upon which I do not touch in this letter, I desire to refer Her Majesty's Government to the arguments as set forth in that paper. These statements have, in all respects, my entire approval. Before the Board of Trade, however, whilst Sir Garnet Wolseley's evidence appeared alone on this side of the question, the other two military witnesses,[1] who are officers of high standing in the service, gave evidence which might, at first sight, be assumed to represent the views of a considerable body of distinguished soldiers.

I am convinced that the opinions expressed by these officers must be taken to be exceptional—not as representative at all. Moreover, great as is the respect which I should wish to pay to the views of officers holding important positions in Her Majesty's Service, there are some statements made by them which are scarcely in accordance with military experience.

For instance one officer assumes, as the starting point of a long argument, that in order that a number of trains, filled with soldiers, should pass in rapid and orderly succession through Calais Station and thence through the supposed tunnel, it is necessary that a very large concentration of troops should first take place either at Calais

[1] It appears that only two military officers actually gave evidence before the Board of Trade Committee. The third who is referred to is Sir Andrew Clarke. A paper embodying the views of that officer was forwarded by the Secretary of State for War to His Royal Highness, but it appears not to have been laid before the Board of Trade.

or at some other station. But this assumption rests on a complete mistake. It is not necessary that anything of the kind should precede the movement of successive trains through the entrance of the supposed tunnel. On the contrary, troops are much more conveniently entrained at many different stations; and the successive orderly passage of trains, which represents the only concentration possible during a long railway journey, might be secured as a simple matter of railway management at the various junction stations.

This is a question of military movement, which has been most thoroughly investigated in all European armies. Other statements which have, like this one, been put forward to justify the construction of the tunnel, seem to me to indicate that, up to the time of the appointment of Sir A. Alison's Committee, the vast importance of the question, from a national point of view, had not been realised by many of those who have expressed strong opinions about it.

Whatever other conclusion may be drawn from the very able and careful report which has been furnished by that Committee, this, at least, must be seen, that as soon as the question on its national side was referred to a mixed body of scientific men and soldiers, it was found to be a subject that required to be treated with the utmost gravity and care.

The recommendations of the Committee are given with the most evident consciousness of deep responsibility, and I would most earnestly impress upon Her Majesty's Government the importance of taking them in the sense in which they have been offered as measured words carefully selected, not to be lightly treated in some loose and general way, but as conveying precisely the full force which Englishmen in a position of solemn national responsibility would naturally intend to convey by using the words they have deliberately chosen.

I am obliged to speak with this emphasis because, in sending me the report of the Committee, you have also sent me a covering memorandum by the Surveyor-General of Ordnance summarising the impression which the report has made upon him. 'They' (the Committee), he says, 'urge that, whilst the land portion of the tunnel should be constructed in the vicinity of *a fortress*, it is also important,' &c.

Now, I wish to point out first of all that the words of the Committee on this subject are that 'it is *imperative* that the tunnel should emerge in the immediate vicinity *of a first-class fortress in the modern acceptation of the term*, a fortress which could only be reduced after a protracted siege by land and sea.'

This change of expression is very important. I should quite agree that if the two phrases were identical, this and the other recommendations of the Committee 'can be carried out without great cost or difficulty,' because other words of the report might then be treated in a similar manner. But, as I am convinced, the Committee meant

precisely the words they used, and intended them to be taken strictly, an opinion in which I am confirmed by the Chairman of the Committee himself. I will now deal with this question first as to cost, second as to difficulty, third as to its sufficiency according to the express words of the Committee.

'A first-class fortress in the modern acceptation of the term' is a very precise expression which can have only one possible meaning. It is necessary to consider what this involves in point of expenditure. Antwerp has cost over three millions sterling. Since 1870 the German Government has expended on the mere alterations and improvements of Strasbourg and Metz four millions sterling. Each of the great fortresses which France has been building on her eastern frontier since 1870 have entailed an expenditure, not easily ascertainable in exact figures, but which has certainly exceeded three millions sterling per fortress. Assuredly the great fortress, on which, according to the report of the Committee, if this tunnel is made, the safety of England is to depend, cannot be estimated at a lower figure than one of the many fortresses which France has been lately constructing. But this is not all. A great fortress implies an equivalent garrison.

The scheme we are contemplating would place us under continental conditions, and in fixing the strength of the garrison of a fortress, so all-important as this would be, it is necessary to employ a garrison at least equal to the great garrisons of the continent.

In time of peace, Metz has a garrison of 10,793; Strasbourg, 8,945; Mayence, Konigsberg, Dantzig, Posen, Cologne, have all garrisons of over 7,000 men.

It must be remembered that this garrison could not be reduced for a sudden emergency. It would be a force which for the security of the country it would be absolutely necessary to abstract from the numbers to be held available for foreign service in cases of emergency, and for all the ordinary military duties in peace and in war at home.

The pay and maintenance of this garrison would be an absolute addition to the cost entailed upon the country.

Next, as to the various proposals of the Committee for rendering the supposed tunnel impassable. It is to be observed that these are not alternative suggestions out of which the Committee think that some may be selected and others omitted, but that, except in one or two instances in which the Committee suggest alternatives, the essence of their proposal lies in the multiplication of methods for destroying the supposed tunnel, and that they consider it imperative to have all these various devices available to avoid the imminent risks of the failure of some of them at the critical moment.

What the cost of all these arrangements taken together would be it is of course impossible to estimate without a much fuller report than it was within the scope of the Committee to furnish. But whatever it may be, if the principle laid down in your minute is to

be adhered to, and the country is not to be put to expense in the event of the tunnel being allowed, I would most urgently impress upon Her Majesty's Government that an exact estimate for the cost of all these works and contrivances should be furnished, that there shall be no stint in calculating for their provision (as an example of the care with which this detail should be carried out, I may mention the necessity for providing that all the telegraphic wires to be carried to a distance from the mines of the tunnel, both to the interior of the fortress and to distant points, *e.g.* to London and to Chatham, should be underground, not overhead wires), and that the whole of the money required for the construction of the necessary fortifications and other works should be paid over to the Treasury before permission was given to begin the tunnel at all.

2. To take now the question whether, if all this expenditure be incurred, the conditions laid down by the Committee could easily be carried out, I have first to observe that the Committee expressly state that they 'are of opinion that their instructions limit them to reporting upon the two tunnels as proposed by and defined in the Bills now before Parliament, and that it would be *ultra vires* for them to extend their inquiry beyond that scope.'

Against both these projects, as they are so defined, the Committee report absolutely. They have not examined the question whether it would or would not be possible so to alter and modify the proposed schemes as to bring them within the conditions which the Committee consider *imperative.*

It seems, therefore, to me that it is altogether premature to take it for granted that these or any other schemes that may be proposed can be so arranged as to fulfil all the conditions that have been laid down.

It appears to me that if some modified proposals are to be brought forward again, it is *imperative* that these should be again submitted to Sir A. Alison's Committee; that, till they have reported that the new or modified schemes in all respects fulfil the conditions which they have laid down, it should be clearly understood that the report of the Committee amounts to an absolute condemnation of every existing proposal for a channel tunnel.

I cannot conceal the grave alarm with which I should view any proposal for permitting, at some future time, the practical application of the principles laid down by the Committee to be carried out as a departmental question, in accordance with the terms of the memorandum of the Surveyor-General of the Ordnance. That memorandum appears to me to be, not a summary deduced from the recommendations of the Committee, but in its principle and spirit diametrically opposed to their report, treating as trivial and insignificant that which they regard as a grave national danger, to be

provided against by a vast multiplication of precautions, and on which, moreover, they are unable in any case to place absolute reliance.

3. To this last question it now becomes necessary to direct full attention, and to enquire, even if the precautions proposed by the Committee are carried out, at the immense cost which they will entail, by our ablest engineers and scientific men, under the direction of superior officers fully conscious of the great responsibility which will be laid upon them, whether we have such reason to place absolute confidence in the protection which they will afford, that the liberty and honour of these kingdoms may be safely trusted to their guardianship, and that we may feel ourselves so absolutely secure, as to render it absurd to suppose that any sudden panics hereafter, as to the incompleteness of the defence provided by these means, will ever entail heavier cost upon the nation than all the profits or advantages which the scheme can possibly promise.

The words of the concluding paragraph of the Committee's report are very significant. Nothing has impressed me more with the magnitude of the danger which the construction of this proposed tunnel would bring with it than the amount of precautions and their elaborateness, which this scientific Committee report as necessary to counteract it. If this danger was small, as some would have the country believe, why should all these complicated precautions be necessary? And yet, when they had exhausted their long category of expedients of mechanical contrivances, calling in to their aid the chemical generation of gases and the most delicate electrical contrivances, what is it the Committee tell us? Is it that when these elaborate precautions have been taken we should have any absolute immunity from danger? Certainly not; the concluding paragraphs of their report speak for themselves on this point.

It would be hardly possible for a Committee which had devised so elaborate and thoughtful a scheme of defence to speak more positively of its inadequacy and insufficiency than they actually do. They acknowledge the risk both of the failure of physical agencies and of human vigilance, and they show clearly that the best conceivable scheme must at last depend on these two points.

If their report has any meaning, it is that the construction of a tunnel would create a new danger to the safety and security of England, a fact that I am not prepared to deny. I would, therefore, most earnestly beg Her Majesty's Government to weigh this danger well before they give their sanction to a scheme which, do what we may, must entail this danger upon our country.

But many considerations have to be taken into account which scarcely fell within the purview of the Committee.

It does not seem to be any longer necessary to discuss the ques-

tion of the immense risk which, from a strategical point of view, would be involved if an enemy were in possession of both ends of this tunnel, *i.e.* when it would become an unassailable road over which reinforcements and supplies could reach him. That question, which has occupied so much space in the public discussion of the question, must be regarded as finally settled by the report of the Committee, for these costly proposals would not have been necessary except in view of a grave danger to be provided against.

The single question, therefore, to be now discussed is, whether under no circumstances there is any risk of our losing the command of the tunnel if it were made. It is very evident that if all these proposed varied arrangements for blowing into the air, drowning, suffocating, or asphyxiating the passengers in the train passing at any moment through the tunnel were, for the sake of security, to be left in the hands of many different agents, the dangers to ordinary travellers would be extremely serious.

The Committee have felt this inconvenience, and have therefore proposed to place nearly all their arrangements for destroying the tunnel so far in the hands of the governor of the great fortress that none of the subordinate officers can employ them till he has placed those officers in electrical communication with the tunnel mines.

It is true, no doubt, that they propose also that there should be electrical communication with the mines from two very distant points, such as London or Chatham. But it must be remembered that the command of all these agencies would be secured by the enemy who, having, by surprise or treachery, seized the central work of the fortress itself, should adopt the ordinary military precaution of cutting all the wires, at some point or other throughout their length. At the least, long wires, such as those referred to, require to be tested every few hours, or they cannot be depended on as absolutely ready for action at the moment they may be required.

All the precautions of the Committee, therefore, depend practically on the security of a single fortress, and, according to their own expressions, the adequacy of the schemes they recommend depends entirely upon the element of time and of ample warning—upon the adoption of precautionary measures 'when war is declared or when there is a prospect of war.'

Now I would ask Her Majesty's Government to consider whether the time when there was a prospect of war, and when our relations with a foreign Government had reached a strained condition, would be that precise moment which an English Cabinet would choose for ordering even the temporary stoppage of the tunnel, an act which would be taken by the inhabitants of both countries as a sure indication of coming war.

To me it appears certain that a time when an English Cabinet is hoping against hope to adjust its differences with a foreign power

would be precisely the time of all others when it would be unwilling to do anything that could be taken as a sign of suspicion, and to which the general public would be sure to attach an exaggerated importance as a proof that the maintenance of peace was despaired of.

Unless, therefore, it is quite certain that no foreign Government that had written angry dispatches on the subject of alleged grievances, will ever suddenly and secretly make up its mind that, war being inevitable, it is better to anticipate diplomatic forms, and, by means of treachery or surprise, obtain possession of so all-important a prize as the fortress on which the whole security of England would then depend, it is idle to trust to protection which only guarantees our safety when ample warning is given, and if precautions be taken when war is imminent. In order that the full nature of this risk may be thoroughly understood, a paper [1] (which I annex) has been prepared in the Intelligence Department by my orders, which paper I now desire to press upon the consideration of Her Majesty's Government. It is based simply upon publicly accessible historical authorities (in no case upon confidential or unpublished papers), and its conclusions can therefore be easily verified. It shows conclusively that wars have commenced much more frequently during the course of diplomatic correspondence than after all diplomatic relations have been broken off; that again and again fortresses have been seized unprepared and without resistance, because their defenders were not aware that they had any reason to expect attack.

Moreover, with the great freedom of our institutions, there are always peculiar dangers to which we, rather than other countries, are exposed.

Only a few years ago Chester Castle was the object of an ill-organised, badly managed Fenian attack. Who can guarantee us that such a seizure of Dover by persons from within might not be made? Such a seizure might be carefully arranged to take place precisely at the moment when the passions of a foreign country were so excited against us that any means might be deemed justifiable to attain so great an object.

When, in addition to these risks, I consider the actual experience of the French war of 1870, where, even after war had been already some time commenced, the Vosges tunnels were left intact, from an unwillingness to destroy such splendid engineering works, and when, in consequence, the invading armies, despite all arrangements that had been made for destroying those tunnels, were able freely to employ them, I feel it to be my solemn duty to warn Her Majesty's Government of the great risk and danger which will be entailed upon the country by permitting, under any circumstances, and even though all precautions have been taken, any tunnel to be constructed.

[1] This is a pamphlet containing an historical account of wars commenced without previous declaration, and is not printed in the Parliamentary Blue Book.

I do not think that this conclusion depends at all upon the single possibility of a rupture with France. I should especially urge upon the attention of Her Majesty's Government the peculiar geographical position of Calais. That town lies in so isolated a position on the extreme north of the French coast-line, and the boundary between France and Belgium falls away so rapidly to the south from near Calais, that Antwerp and Brussels are both much nearer to Calais than Paris is.

Any power, therefore, which, when at war with France, had taken possession of Belgium, would find it possible to seize Calais, and might find it convenient even to punish an alliance of ours with France, by a sudden seizure of Dover.

When once it is realised that if this tunnel were constructed we might, despite all our precautions, very possibly some day find an enemy in actual possession of both its ends, and able at pleasure to pour an army through it unopposed, I cannot believe that the people of this country would consent to accept this positive danger for any problematic amount of commercial profit.

The military force in Great Britain is not large enough to contend against the army which any of the great Continental Powers that had obtained possession of the tunnel could send into England through it.

We alone, of all European nations, have hitherto escaped the necessity of arming and organising the entire population, but if this tunnel be constructed I wish to record my opinion—an opinion shared by the ablest of our officers—that our only positive security can be found in following the example of our neighbours, by creating a vast army like theirs—an army which would probably entail the necessity of a compulsory system of universal military service.

All the sacrifices which Frenchmen and Germans make year after year, in order that vast armies, which are now literally reckoned by the million, may be at the disposal of the State, would, indeed, be senseless and absurd if, when once they can bring the question to fair trial on dry land, they were not, despite all the courage of our soldiers and the abilities of our officers, able to overpower the little army which we keep up.

Nothing, perhaps, shows more clearly the extent to which our population, immersed in peaceful pursuits, remains unaware of the military condition of neighbouring States, than the tone which was at first adopted on this question by many of the public.

It was asserted by many intelligent writers that if the tunnel were constructed there would be no more reason why a foreign power should find its advantage in seizing Dover than we should gain by seizing Calais. But Her Majesty's Government know well what is the difference in point of military preparation between England and all the Continental States. They know well that if once the question of military superiority were brought to an issue between us and any

one of these Great Powers upon English soil, the end could only be our destruction as a free nation.

They know well that no delusion can be greater or more fatal than to imagine that an army of unorganised and very partially trained Volunteers and Militia could, by anything short of a miracle, stand up successfully against a regularly trained and well-organised army; they know what would be the effect upon our commercial credit and upon our most delicate commercial system of the appearance of a foreign army within sight of London; they know how the mere chance of success in such a scheme would tend to cause attempts to be made; they must feel, as well as I do, that the construction of a tunnel—do what we might to neutralise its danger—would multiply the recurrence of panics, and of the evils and commercial losses they entail.

They can measure these dangers, and knowing that we should be exposed to them, if in time of war, or even when there was any possibility of war, an enemy obtained possession of Dover and the tunnel by surprise or by treachery, or if our mechanical contrivances for the destruction of the tunnel failed to work when required, I would most earnestly beg of Her Majesty's Ministers to pause ere they accepted for the nation, whose destinies are in their hands, a new element of danger that would threaten our very national existence.

For me, at all events, there is one plain duty, and that is, on military grounds, to protest most emphatically against the construction of this tunnel between England and France.

I have, &c.

GEORGE.

The Right Honourable
H. C. E. CHILDERS, M.P.,
&c., &c., &c.
Secretary of State for War.

## MEMORANDUM BY LORD WOLSELEY.[1]

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*The Tunnel an acknowledged Danger.*—I do not think there is a naval or military man of any experience who does not consider that the construction of a submarine tunnel between England and France would introduce a new element of danger into the problem involved in the defence of England from invasion, although some may differ as to the extent of that danger. There are some who say, 'You can effectually counteract this danger, protect yourself against it, in fact nullify it;' but that the tunnel does mean a new danger is virtually undisputed, and I believe that all thoughtful students of war will admit this to be the case. There could be no stronger proof of the existence of this danger than the magnitude and elaborate nature of the precautions which the Scientific Committee deem to be essential for the purpose of minimising it should England consent to the construction of this tunnel. If there be no danger involved in its construction, why propose such great and costly works and appliances to protect us from its evil consequences? But whilst all will, I think, acknowledge that danger is involved in the scheme, a large number will go further, and will assert that whatever precautions be taken, and even if it be assumed that more money is spent on fortifications than any British Cabinet is ever likely, in time of peace, to ask from Parliament, or than a public company would subscribe in addition to the actual cost of the undertaking itself, it will still be impossible completely to provide against the risk. You may, by a very great outlay of money in the first instance, and a considerable annual expenditure on the maintenance of fortifications and on other necessary precautions, do a great deal to mitigate the evil; but you cannot remove it altogether except by the creation of an army fully equal in every respect to that which France can put into the field, and I am sure the people of England have no intention of imposing such a fearful burden upon themselves.

*What 'National' Advantage then justifies its Construction.*—Why, therefore, should Parliament sanction a scheme that tends in any degree, no matter how small, to emperil our national existence

[1] From Channel Tunnel Correspondence, p. 271.

or to entail such serious responsibilities upon us? Let the engineers and the railway speculators who are pushing it forward make clear to us what are the national advantages which should induce the nation so to weaken itself. They have not done so yet, long as the discussion has now lasted. The advantages must be of immense importance indeed if they are to counterbalance the least risk to our national security. It is not the nation which has demanded this great change in our position; it is not the nation which has asked to become a part of the Continent, and to cease to be 'a sea-girt isle.' I confess I am at a loss to understand what we are to gain, except an immunity from sea-sickness when crossing the channel. I am aware of sea-sickness being one of the most unpleasant and most trying of human ailments; but are we deliberately to make England less safe in order that tourists may not suffer from it during the 2½ hours occupied in the channel passage?

I am not in a position to express any opinion as to the effects the construction of the tunnel will have upon trade; but looking to the fact that, although we have railways from all our coal fields to London, considerably more than a third of all the coal consumed here is brought by sea, and considering the high toll which all goods sent through the tunnel would have to pay if rates are to be charged on a sufficiently remunerative scale to pay a fair interest on the money spent in this very costly undertaking, I cannot imagine that any very large proportion of the trade between England and Europe would ever go through it.

We shall, of course, hear a great deal of the inconvenience and hindrance to trade occasioned by the 'breaking of bulk' in sending merchandise by sea to and from the Continent. It is obvious that to some extent, even as a mere money question, there must be set against this the greater costliness of transport by rail through an expensive tunnel as compared with the cheap transit of goods by sea between England and the ports of France, Germany, and the Baltic. But I am not in a position to assess the actual balance in economy to which-ever side it may incline. I leave these calculations to the promoters of the scheme.

*French Interest in the Subject no Argument in favour of permitting it.*—We are told the interest taken in '*the subject in France is greater than in England*,' and it is very natural it should be so. A nation that can place an army of three quarters of a million of drilled and disciplined soldiers in the field has nothing to fear on the score of invasion from us, whose army is insignificant in comparison with theirs. It is the fact of France having this great highly trained army, whilst we could not, even in England itself at this moment, place an efficient army in the field of two army corps (about 60,000 men) of regular troops, although all our army reserve had rejoined the Colours; that shows the absurdity of men saying, when discussing

this question, 'Why should we not seize the Calais mouth of the tunnel in the event of war or of its being threatened?' There is no reason why we should not do so by a *coup de main* or by treachery, but having done so with a few thousand men, and assuming we then poured all this army of ours through the tunnel, how could we with 60,000 men hope to make front against the hundreds of thousands that would be hurled against us, or what object could we have in attempting this forlorn hope? We could not hope to conquer France, or even to capture the strongly fortified city of Paris, with such an army. In addition to this fact, which very naturally weighs much with the rulers of France, it is well known that at the time when this question was revived there was a craze in Paris for all sorts of financial speculations, and companies started for the promotion of railways or banks, &c., in Tunis, Tripoli, or, in fact, in any foreign country, were certain to obtain there great financial support.

The railway company 'Du Nord' has the complete monopoly of the carrying trade in the departments of France opposite Dover, so the construction of this tunnel would naturally be a great gain to it; the powerful influence which this particular company exercises is therefore all given in favour of the scheme. We are told that this scheme has also met with the support of powerful financial houses. I do not doubt it, but surely it is the business of nations and of statesmen to look on their own account at the political bearings of all such questions, although the financial houses may fairly claim to deal with them on financial grounds, unhampered by political or patriotic considerations.

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*Previous Correspondence with France no Argument for permitting so dangerous a Work.*—Let us deal now with another side of the question. If it can be clearly shown that any danger, no matter how slight, would be entailed upon England by the construction of this tunnel, I see no good reason why it should be allowed because seven years ago the Government of the day raised no objection to it. The foreign policy of England is not of a nature so constant and fixed that we need, in this tunnel question, be influenced in the least degree by the diplomatic correspondence between our Foreign Office and the Count de Jarnac in the year 1874. It is generally understood that the tunnel scheme was then looked upon as fanciful and unfeasible. It was not then regarded as having entered within the zone or scope of practical undertakings. No one believed it would ever be made, and, if mentioned, it always raised a smile, as does now any reference to flying machines as substitutes for railways. It must be remembered that no treaty with France on the subject has ever been ratified, and that, until a few months ago, the whole question has been in abeyance. Our Government in 1874 appears to have regarded the scheme as a purely speculative one, never likely to

be practically realised, for they do not seem to have invited the opinions of any naval or military men upon what is essentially a great naval and military question; and, for the same reasons, it would seem, our Admirals and Generals treated it then with similar indifference. The subject has now, however, assumed a different aspect, and it cannot now be allowed to go by default: those in the army and navy who are best able and most entitled to express an opinion upon it are almost unanimous in condemning it as a project that is fraught with danger to our national existence. We must not, therefore, allow this tunnel to be begun without the fullest possible inquiry into the manner in which it will affect our future as a nation.

To urge as a reason for allowing it to be made without any further investigation, and without obtaining the views of all our best soldiers and sailors upon it, that a refusal would lay us open to a charge of pusillanimity, and would make us 'the laughing-stock of continental nations,' is surely little less than an endeavour to burke all further inquiry. Those who urge this upon us would apparently allow the fear of ridicule to influence them, but not the fear of danger.

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*What we owe to the Channel.*—Let us pause for a moment to consider how it comes about that, whilst all the great and would-be-great Continental Powers are bowed down by the weight of military burdens, we have hitherto lived in safety and grown rich, though the army we maintain at home is so small as it is. How is it that we have not had to submit to the law of universal military service, nor to conscription in any form? What is it that has saved us from foreign invasion so long? There can be but one answer: it is our 'silver streak.' A railway company now asks permission to make an easy way through that guardian girdle to which we owe so much.

*The Duke of Wellington's Belief in the Possibility of Invasion.*—The Duke of Wellington, by his now historical correspondence with Sir John Burgoyne, roused the nation to a sense of its helpless condition and its powerlessness to resist a formidable invasion. The Militia Bill and the fortification of our great dockyards and arsenals were the results.

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*The Channel, not like Steam, both a Cause of Danger and in Part a Means of Protection, but a Danger and that only.*—The adoption of steam as a motive-power for vessels revolutionised the condition of all questions bearing upon invasion, and was, therefore, at the time, as pointed out by the Duke of Wellington, a subject of very great importance to us. But if it added to our dangers, it also—certainly in a lesser degree—increased our means of defence, especially when the invention of the electric telegraph is taken in conjunction with it. This question of the construction of the tunnel

brings with it, however, nothing but danger. Steam may have been the first great step towards the destruction of our former naval supremacy, and in that way its effect may have hurt us, but, whatever advantage it conferred upon others, it conferred similar benefits upon us; but this not so with the tunnel, for it will open out a road for the invader into England, along which we have no army with which we could, under any circumstances, pass over to the Continent.

*Why Tunnels through the Alps afford no Argument in Favour of the Channel Tunnel.*—There is not, in my opinion, any real analogy between the considerations involved in the construction of a tunnel under the Alps and of one under the English Channel. In the former case great highways between the countries on each side of those mountains have long existed, and over them armies have often crossed already, and could again do so at any time. No roads, however, unite England to the Continent. A great wet ditch, over twenty miles wide at its narrowest point, surrounds our island, the navigation of which, except in the calmest weather, would be no easy matter for any large flotilla. Soldiers, who know the value of an ordinary wet ditch to any fortified place, are fully alive to the greatness of the security which a ditch like the Channel affords. If any great Continental Power had a similar wet ditch protecting its frontier, I think we may safely assume it would never forego that advantage, in fact, cast it recklessly away, by allowing it to be tunnelled under. And yet a great military power would have little to dread under the circumstances in comparison with the risks a tunnel must entail upon us. With them all laws and commercial regulations are primarily based on military considerations; with us, military considerations come last. To these great powers the construction of a new high-road over a mountain frontier would be of more consequence than the digging of a tunnel under it. To guard the tunnel would be a simple operation to a nation possessing an immense standing army; indeed, it may be safely asserted that no tunnel under the mountain frontiers of great nations will ever be of any use to the invader, for, even if by a *coup de main* or by treachery he managed to seize the far end of the tunnel, he would have to fight a pitched battle there with an army of at least equal strength to his, and to do so in a position where defeat, or even want of success, would be his destruction. The great military powers do not base their security upon plans designed for the defence of their frontiers, or with a view to making them impassable to an enemy, but upon the conviction that they themselves have an army of sufficient strength and worth to meet the army of all or any comers in the open field. They do not depend upon frontier fortifications, but upon highly efficient armies, ready at all times to take the field upon the shortest notice, upon armies in which, I may say, the whole male population is comprised, all thoroughly organised as a great machine

whenever the directing power pulls the lever that is to put it 'in gear' and into motion.

Of course, wherever nature has been kind enough to bless them with great natural barriers in the form of mountains or rivers, they are wise enough to utilise those defences and to strengthen them by art; but, as a rule, it may be said that one and all of them could to-morrow invade their neighbour's territories, notwithstanding these defences, should they consider it expedient to do so. No nation has as yet ever been able to render its frontier inviolable by means of fortifications, although, according to the natural features of those frontiers, it may be, or has been, possible by means of fortifications to make the would-be invader pause before he resolved upon incurring the risk involved in running his head against the strong places with which those frontiers bristled. The Rhine, and the fortifications along the eastern frontier of France, did not save her from invasion in 1814, 1815, and 1870, although, had her army been at all equal in numbers to the invading forces, their value would have been priceless. France now feels that her only safety is in having an army in every way equal to that which her possible invaders can bring into the field. With such a force, organised so that its mobilization can be effected in a small number of days, she can afford to have a tunnel under the Alps. Her strength is in her army: but the strength of England lies in her navy and in the protection which her insular position secures to her. If we had a great standing army like that of France; if the whole manhood of England were organised into regiments, and so into a great military machine complete in every part, and always ready to take the field—we could afford to create this new danger to our national existence. If we felt that, were France to pour her hundreds of thousands of soldiers into this country, we could meet her armies with others equally powerful, we might make up our minds to running the risk of staking our all upon the result of battle, although, in my opinion, it would be very foolish to do so without we had some great national object and advantage in view; but, when we know that we have no such army, and never can have it under our form of government; when we know that were a hostile army of 150,000 men to be landed here or come through the tunnel, that London would be at its mercy, as we could bring no army into the field that would have the remotest chance of resisting its advance, I think that most reasonable men will admit there is no analogy between tunnelling under the Alps and tunnelling under the channel. The construction of new roads across the frontiers of continental states concerns them little, partly because those frontiers are mostly open and are already traversed by numerous highways, but chiefly because it is to the power of their armies, and not to the strength of their frontiers, that they look for security. The existence of the channel has hitherto saved us from the fearful burdens which an army raised upon the principle of universal service

imposes, but when that channel is bridged we shall either have to follow the example of the continental nations in their military establishments, or to content ourselves with depending for our safety upon the forbearance of the power that, for the time, may hold the Calais end of the tunnel.

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*Why do all Foreigners endure the Burden of Universal Service? Do they like it?*—A German having been asked lately by an Englishman why it was that his countrymen went on yearly drilling hundreds of thousands of men who might be so much more usefully and profitably employed, replied, 'You English, with your great wet ditch round you, know nothing of the horrors of invasion: we are well acquainted with them, and, having no natural line of defence, like the seas which encompass your shores, to protect us from attack, we infinitely prefer submitting even to the tyranny of our military system, to the immeasurable burden of universal service in the army, rather than run the risk of finding an army overrunning our country, and having to undergo the sorrow, the pain, and the public and private humiliation which that would mean: of two evils, we choose that which is as a flea-bite compared to the killing poison of the cobra.' He went on to say that we English did not understand or appreciate how much we owe to our 'silver streak.'

This conversation took place before the project of the tunnel had assumed the alarming proportions it now has; but what would that German have said if my friend had calmly told him, 'We intend to bridge over that "silver streak" as soon as our possible enemies, the French, will raise the necessary funds for doing so. We believe in moral force, and we do not for one moment contemplate the possibility of any Continental Government being criminal enough to have any wish to invade England'?

'Those whom the gods wish to destroy, they first drive mad' would certainly have been the German's instant thought.

*Value of International Guarantees and Neutralising Treaties.*—I have heard it stated that this tunnel can be neutralised—held sacred—under a convention to be entered into with France and other Continental Powers, and that it is ridiculous to imagine that any civilised power would ever, under any circumstances, disregard the terms of such an agreement. If this proposition were left to the common sense of the country, after a thoughtful consideration of what all the previous experience of mankind on the subject has been, I should have no fear as to the verdict. Unfortunately, as has been fully acknowledged by one of the most prominent advocates of the scheme, Englishmen, for the most part, do not face the facts of the situation at all.

Their wet ditch has so completely saved them from the necessity of contemplating the danger of war, that they never do consider it at

all, and they do not study the experiences of other countries, or apply them to themselves. They do not realise that the question now is, whether the very cause which has saved them from the necessity of taking into account the possibility of war shall or shall not be removed. Let me, therefore, entreat them for a moment, to place themselves in the position they are so willingly going to assume, of a country which has to face the possibility of an invasion, provided only its enemies choose to invade it. Let them then realise that the thing on which they propose to stake their national existence is the character of the man who may at any time hereafter have the means of wielding the power of France. Is human nature so utterly changed that it has become certain that what has been may never be again?

What is the nature of the treaty that a man of the great Napoleon's turn of mind and morality would respect or care anything for the moment he felt that the interests of his nation would be advanced by breaking it? Did the most solemn treaties save Genoa or Venice from the sword? What guarantee have we that another Napoleon may not again direct the destinies of France? and, supposing he did appear, should we know his intentions before he struck his blow? What did Frederick the Great care for such treaties? Did they save Austria from his rapacity, and from his greed for extended territory? Where, in the history of the world, from the earliest time down to the years when Khiva was made Russian, or when Tunis was added to the African possessions of France, do we hear of treaties being respected by the nation who had an interest in breaking them, and who felt itself strong enough to do so?

It is no new theory, it is the experience of all ages, that the nation which depends for its safety, for its independent existence, upon paper treaties, unsupported by the actual strength that would always enable it to enforce compliance with them, rather than upon that strength itself, is far down on the decline that leads to national ruin.

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*Defence of National Life a Duty.*—The nation that would shirk the responsibilities of independent national existence, and would hide its want of manhood and its patriotism under these pretty words, deserves to exist, and will exist, no longer than the moment at which its theoretical security is touched by the rough, practical hand of the enemy, who will laugh at the cries against 'breach of faith' when the 'confidence trick' ends in the way it always has ended—in the robbery of the deluded victim.

*The Volunteers not a Body kept ready for sudden War.*—No one can have a higher appreciation of the Volunteer Force than I have, and, were invasion threatened, I am confident its numbers would soon swell to double its present strength; but it is not organised for war, nor in a condition to take the field to resist the advance upon

London of a large regular army. There is springing up in some quarters an idea that the defence of the country can be safely left to our Volunteers and Militia: a doctrine more dangerous to England it is difficult to imagine. Those forces would be excellent adjuncts to an army in the field, if we were allowed by our enemy time to organise them; but to depend upon them as our main fighting body could only end in disaster.

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*Is the Destruction of the Tunnel an easy Matter?—Necessity of a First-class Fortress.*—Since the question of the application of means to destroy the tunnel has been carefully investigated by a body of able scientific men, the whole assumption that the destruction of the tunnel was quite an easy matter has been shown to be utterly untenable. The Committee consider it indispensable in order to enable us to have any command at all of our contrivances for destroying the tunnel that a great first-class fortress should be constructed at Dover.

But then that at once changes the whole character of the security on which these kingdoms have hitherto rested.

*Foreign Nations, though they spend Millions on Fortification, do not trust to Fortresses for National Existence.*—Foreign nations who are essentially military first, and commercial afterwards, have expended all their ingenuity and millions upon millions of treasure in constructing great networks of fortification to guard their frontiers.

It is simply inconceivable that, do what we may, we should be able to construct a fortress more impregnable than the fortresses which the whole national ingenuity of France and Germany have devised to guard themselves from attack. Yet neither of these Powers for one moment dreams of depending upon these fortresses. They use these fortresses as great adjuncts to their army in order to compensate for the difficulty under which they live of having easily assailable frontiers. But, in order to secure their national safety, they find it necessary, despite all their fortifications, to place every citizen in the country at the service of the State for the purpose of military service. They do not do this because they like it any better than we should, but they do it because, despite the best precautions they can devise, they know that fortifications afford no adequate security for national safety.

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*Danger of Surprise of our Fortifications without Warning.—Fatal Result.*—The greatest of all the dangers to which the construction of this tunnel will lay us open is that our end of it may be seized by surprise or treachery without any warning and before the machinery designed for its destruction had been put in motion. In considering this point, we can afford to assume, for the sake of argu-

ment, that all appliances for blowing up the 200 feet of chalk intervening between the tunnel and the bottom of the sea, and so effectually flooding it, and that all arrangements for flooding the tunnel from our end by opening sluice-gates, &c., &c., are all in perfect order, and would, if made use of, be completely effectual. The nation in possession of the Calais end of the tunnel, in order to become the masters of England, has, nevertheless, only to land during any night a few thousand picked infantry at Dover, or to send them through the tunnel itself, to seize our end and the works intended for its protection, and so by this *coup de main*, or by treachery, possesses himself of the wires for firing your mines and the apparatus for flooding it from sea. This would be a very feasible operation, especially in calm weather. In an hour's time from the moment when our end of the tunnel was taken possession of by the enemy, large reinforcements could reach Dover by rail through the tunnel, and, as there are to be two lines of rail, before morning dawned Dover might easily be in possession of 20,000 of the enemy, and every succeeding hour would add to that number. Dover held by an enemy in possession of the tunnel would place England at his mercy. Our fleet could do nothing to help us, and we have no army under present circumstances, nor are we ever likely to have any army, capable of resisting the military strength of any of the great Continental Powers. It is essential that this fact—and fact it certainly is—should be known and realised by the nation.

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*Improved Harbours on French Coast make this more easy.*—The construction of a splendid harbour at Boulogne, designed to admit the largest class of war-ships, is now being pushed forward rapidly. Great harbour works are also in progress at Calais and at other French ports on the channel. These works would enable a large army to be embarked there at any time of tide, and would afford a safe anchorage for the two or three steamers that would be required for the conveyance of the few thousand infantry intended for the sudden descent upon our end of the tunnel. The construction of these great harbours so close to our open and unprotected shores should, I think, cause us to review our military position at home very seriously, and to make us pause ere we discard the only real armour we possess, namely, the protection which the 'silver streak' has hitherto afforded us.

*Napoleon and Wellington believed Invasion possible in their Day.*—The greatest of all generals believed in the possibility of successfully invading England under certain conditions, and the Duke of Wellington was also of that opinion. I have, however, no intention of discussing here this much-vexed question: to do so would be foreign to the subject I am dealing with, namely, the dangers which

the construction of the Channel Tunnel would entail upon our country.

*How much more Easy the Landing of a Small Surprising Force.*—There is a vast difference between the 'invasion of England,' as that operation is generally understood, and the mere landing of a few thousand infantry in or close to Dover Harbour for the purpose of seizing, by surprise, our end of the tunnel. The former means the disembarkation of an army of 150,000 men, fully equipped, with guns, cavalry, and military material of every kind, and would be a very difficult operation, even under the most favourable circumstances; but the latter is merely the small affair of a dashing partisan leader, and could be effected in many ways.

*Ease with which Force could be Despatched without Warning.*—It is necessary, in order to understand this argument, to remember that at Dover we have as yet a few not very important forts, no 'fortress' in any proper sense of the term, and that, even if we had a first-class fortress there—which it would require a vast sum of money to construct—we should still be open to the danger of surprise. For the danger is not lest 20,000 or 30,000 men should land somewhere in the neighbourhood of Dover and take it by *coup de main*, or a 'hasty siege' from without, but that it should be taken by surprise by a mere handful of men from within. Those who ridicule the 'fears' of men who dread the construction of this tunnel write and talk as if, according to all past experience, it was a certainty that the nation which intends to attack another would give warning of its intention beforehand. My contention is that, were a tunnel made, England, as a nation, could be destroyed without any warning whatever, when Europe was in a condition of profound peace; but that, as long as no tunnel connects England with the Continent, this could not take place. The reason is obvious. To seize our end of the tunnel, with all the telegraphic wires and the various mechanical contrivances designed for its destruction, together with the forts and batteries constructed around it, would be a small military operation, requiring no preparation that would attract any attention whatever.

Calais is in the First Army Corps district, where the standing force always with the colours is 26,000 men, from which the handful of troops required for the surprise of Dover might easily be furnished at a moment's warning. They could be embarked at either Dunkirk, Calais, or Boulogne, at all of which places there are garrisons, without the possibility of any warning reaching us. If such an operation were contemplated, the first step would be the military occupation of every telegraph office in the district. To assert that no such operation could be effected without our obtaining ample warning of it is to assume that the General charged with its accomplishment is as entirely ignorant of the business of war as the man must be who makes such an assertion. Still more easily might a few thousand men be

sent at night through the tunnel itself, whilst we 'gentlemen of England' were abed, dreaming of the time when the lion and the lamb are to lie down together without the latter being devoured by the former. A party coming through the tunnel in two or three large trains would suffice to capture our end of it and all its attendant works. To say this could not possibly be done without its being known at our end of the tunnel that the trains had started from Calais is absurd. The veriest tiro on the staff could devise off-hand a scheme for keeping us ignorant of what went on in, say, the whole Calais district from midnight until the following morning. It is not likely that ticket-takers or telegraph-operators on the French side would be allowed any channel of communicating with us until the operation had been effected. The whole plan is based upon the assumption of its being carried out during a time of profound peace between the two nations, and whilst we were enjoying life in the security and unsuspicion of a fool's paradise.

*Surprises during Peace, the Commonplaces of History.*—If it be said that this is to suppose that the nations of Europe are 'Ashantees,' I reply that, taking the whole period of the last two—the most civilised—centuries of the world's history, from 1700 down to the present time, not one war in ten has commenced with any formal notice whatever giving warning of the intention to commit the first hostile acts; that in the vast majority of cases wars have been begun in some form of surprise by one nation on the other; that some cause of irritation having arisen, acts have been done by subjects of one nation upon those of another which were not regarded by the aggressor as acts of war, and that these being vehemently resented by the aggrieved nation have led to sudden and unexpected reprisals; that secret treaties, such as have continued down to our own day, for the dismemberment of some of the European fraternity, have been the commonplaces of history; that every nation of Europe, specifically Russia, Austria, Prussia, France, England, Spain, Portugal, and the United States of America, have each severally, and often together, commenced hostilities, whilst the ambassadors of the power attacked were still residing at the court of the assailant, and whilst their envoys were still at the court of the assailed power, and without any pause or time granted for a declaration of war to reach the assailed power. When surprise has not been deliberately attempted nations have constantly drifted into war, there being no time at which the hope of peace was given up till long after the most violent hostilities had been carried on, and even battles had been fought. No form of government can be said to be more chargeable than another with this kind of action. Republican America, republican France, despotic Russia, imperial France, imperial Austria, kingly Prussia, constitutional England, have vied with one another in such acts. The fact is, that a nation in a condition of profound peace is utterly unable to

judge of what its own feelings would be during the excitement of some sudden sense of wrong done to its national life. Certainly, taking into account our seisure of the Danish fleet in 1807, and our assurance to Spain, after Admiral Byng had destroyed their fleet, that it was not to be considered as a declaration of war, we have carried both the sudden change from peace to war, and the classification of acts which do not constitute war, to about as extreme a limit as any power.

*Surprises of great Seaboard Fortresses have been numerous.*—At the same time also our own history presents the most startling instances of the successful capture by dash and surprise of seaboard fortresses. The story of our colonial empire is replete with such events, but perhaps the most striking was the capture, in 1807, of Curaçao—for a description of which I would refer to Cust's 'Annals of the Wars,' or James's 'Naval History.' Upon that occasion what was deemed an impregnable fortress—what, in fact, some gentlemen would doubtless term a 'first-class fortress'—was taken in a few hours with an insignificant loss. The expedition had been sent nominally 'to reconnoitre the island of Curaçao, and to ascertain the disposition of the population to ally themselves with Great Britain.'

I should like to refer all those who attach much importance to the remarks of the 'République Française' on the Channel project to the incidents of the French invasion of Spain in 1808, and to the manner in which Figueras, Barcelona, Pampeluna, and other fortresses were then surprised, during peace and friendly alliance, by the French troops.

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*Ease with which Dover could be similarly surprised.*—The civilian may start in horror at the statement that Dover could also be taken by surprise. If he has any doubt on the subject, let him test the question for himself, and go at once to Dover; let him walk along the piers after midnight and judge for himself; likewise, imagine a few steamers arriving alongside the quays; and then ask himself what there would be to hinder the men they carried from landing. The last thing that would occur to the minds of the few policemen and coast-guardsmen about at that hour would be that those they saw landing were enemies: until they had been made prisoners no suspicion would naturally occur to them. Why should it be otherwise in a state of profound peace with all mankind? Let the civilian then walk from the beach to the gate of every fort, where, if he would announce himself to be an officer returning home to barracks, the wicket would be opened to him, and, if he entered, he would see but two men, one the sentry, the other the non-commissioned officer who had been roused up from sleep by the sentry to unlock the gate.

The first few men ashore from these supposed steamers might thus easily obtain an entrance into every fort in Dover: the sentry

and the sleepy sergeant might be easily disposed of—the rifles of our sentries at home are not loaded—and the few men on guard made prisoners whilst asleep on their guard-bed. Knowing what our barrack life in England is like, and what our manners and customs are, I assert most positively that an enemy might to-night, in this manner, obtain possession of every fort in Dover, if he wished to do so; and I have no doubt we might do likewise in Calais or Boulogne, had we any object in doing so. The whole garrison of Dover consists of about 2,000 men, distributed almost exclusively amongst four forts, at the entrance to each of which there is always a small guard furnishing a sentry over the gate; and I have no hesitation in saying that if it suited the purpose of an enemy to do so, an enterprising leader could, in the manner I have sketched out, make himself complete master of all the place any fairly calm night, and that, if the affair were well managed, nothing would be known of it in London, or even outside Dover, before the following morning. I must apologise for having even so far committed myself to details that are self-evident to any soldier of war experience: but they have been rendered necessary by the repeated assertions of inexperienced men, that no such surprise would be possible, as the enemy could not prevent us from obtaining early intimation of his intentions from ticket-takers, telegraph-men, and others on the French side of the channel. The surprise of Dover could be far more easily accomplished by a few thousand men coming through a tunnel in the middle of the night in three or four trains. I shall not insult the intelligence of my readers by attempting any detail of the measures that would be taken by the enemy to lull all suspicion and to prevent any intimation of his intentions from reaching us. The required precautions will suggest themselves to the most simple minded of soldiers.

*Construction of a Tunnel would* (*a*) *facilitate Surprise already easy*; (*b*) *make Surprise fatal to us, instead of useless to an Enemy, as it would be now.*—I admit that Dover can be taken by surprise even now, whilst England is still an island: but the operation would be a far more certain and an infinitely easier one if a railway tunnel connected Dover with Calais. The railway projector is apt to remark when this admission is made, 'If Dover can be so easily surprised now, why dread the construction of the proposed tunnel?' The answer is a simple one—'We have no reason to dread the capture of Dover by surprise as long as no tunnel has been made, for the enemy who had seized it must be in such very small force that we could easily turn him out of it, for he could only be reinforced by the sea, where rides our fleet. To send reinforcements to the handful of men who had seized Dover during the night, the enemy must have command of the channel, and very extensive preparations would be required beforehand for the concentration and embarkation of a very large army. Those preparations could not possibly be effected before

Dover had been taken by surprise without attracting attention. They would necessarily be spread over several weeks, so that we should be well warned beforehand; and if they were postponed until Dover had been so captured, it could easily be re-taken by us before the enemy could complete them or be in a position to land a large army on our shores.'

As long as no tunnel connects Calais with Dover we have consequently little to fear from the capture of our forts. To seize them at present by *coup de main*, to be effected by a handful of troops, would fulfil no useful purpose to an enemy: such an operation would be to send the men employed to certain eventual destruction. The case would, however, be far different if a tunnel existed; for its capture by the enemy would enable a large army to come by rail through it.

No discussion as to the merits of schemes for the destruction of the tunnel, or of the chances of their always being in working order when required, must be allowed to determine the question of whether the construction of a tunnel is or is not to be allowed; for if our end of it and the neighbouring works of Dover can be taken by surprise, no such discussion can be of any practical value. If a robber can possess himself of my hall-door key, why embark in a discussion as to the strength of the door itself?

It is nothing to say that the existence of great harbours at Boulogne, Calais, Dunkirk, immediately opposite to Dover, is a danger now, or that the facility with which, as I fully admit, Dover could be taken, is a danger now. It certainly is a danger, but in reality it is a mere flea-bite compared with the danger if the tunnel were in existence, because if 5,000 men were to land now we could send by railway 20,000 men to turn them out. All the men who, under present circumstances, could be sent here to support those 5,000 men must come by sea, and our navy would be in a position to attack the reinforcements when on the sea, whilst our army could annihilate the 5,000 men who had already landed. But the danger with a tunnel in existence would be very different when the Dover end of it had been seized by the enemy, because if they can, as Sir Edward Watkin says, send trains through the tunnel at five minutes' interval, making the journey in half an hour, they could, in other words, in four hours send 20,000 men through the tunnel.

*A Coup de Main one thing, an Invasion quite Another in point of Difficulty.*—The contention that the tunnel could only be of use to an enemy who had already successfully invaded England is unsound, unless, indeed, it be contended that this *coup de main* of a handful of infantry must be regarded in that light. However, be this as it may, it must be remembered that the works at our end of the tunnel may be surprised by men sent through the tunnel itself, without landing a man upon our shores. A couple of thousand armed men might

easily come through the tunnel in a train at night, avoiding all suspicion by being dressed as ordinary passengers, or passing at express speed through the tunnel with the blinds down, in their uniform and fully armed. The first thing we should know of it would be by finding the fort at our end of the tunnel, together with its telegraph office, and all the electrical arrangements, wires, batteries, &c., intended for the destruction of the tunnel, in the hands of an enemy. We know that trains are often despatched along the underground railways at intervals of two and a half minutes, and those best entitled to express an opinion on the subject say that trains could be safely sent through the tunnel every five minutes, and do the entire distance from the station at Calais to that at Dover in less than half an hour. Twenty thousand infantry could thus be easily despatched in twenty trains, and, allowing, not two and a half minutes', but 12 minutes', interval between each train, that force could be poured into Dover in four hours from the moment when the first detachment had surprised the station at our end of the tunnel. Of course, no man in his senses would attempt to march or send troops through the tunnel if he knew that even 100 riflemen were on the *qui vive*, waiting to receive them at the far end. But since the day when David secured an entrance by surprise or treachery into Jerusalem through a tunnel under its walls, how often have places similarly fallen? and, I may add, will again similarly fall? The general who had by ruse, or by force, or by surprise, contrived to make himself master of our end of the tunnel would feel he had behind him the best of all possible lines of communication.

The invasion of England could not be attempted by 5,000 men, but half that number, ably led by a daring, dashing young commander, might, I feel, some dark night easily make themselves masters of the works at our end of the tunnel—and then England would be at the mercy of the invader. This is no wild dream of an impossible undertaking: few wars occur in which more hazardous and, I may add, more difficult enterprises are not attempted, and often succeed from their very boldness.

Are we to incur this risk on an assurance from the Government of France that such an attempt will never be made? Is the stability of that Government so assured, or the policy of the French nation so constant, that we can afford to risk our existence upon such a guarantee? And why should we do so? These are questions that every lover of his country should put to himself before parliamentary sanction is given to the construction of the tunnel.

*Such a sudden Coup de Main would involve no risk to Enemy.*—This operation of seizing by surprise or by means of treachery the works intended for the defence of our end of the tunnel would involve no great risk upon the nation attempting it, for, even if it failed, it would only entail the loss of a few thousand men. Remembering

the stakes to be won in case of success, it is quite certain that, sooner or later, the attempt would be made. The existence of the tunnel would, therefore, I contend, be a constant inducement to the unscrupulous foreigner to make war upon us, as it would hold out to him hopes of a conquest the like of which the world had never known before. With such a bait at the end of the tunnel always dangling before the foreign ruler who was anxious to strengthen his own position or to immortalize his name, and the knowledge of how little he would risk by the attempt, it is scarcely begging the question too much to say that it would be made at some period or other.

Let us assume that our arrangements for letting in the sea are in perfect order, and well conceived, still it must be remembered that, unless the tunnel itself had also been destroyed by great mines, so as to admit the sea from above through the crater they had formed, there is no reason why the water should not be pumped out of it if an invader had secured possession of our end of it—an operation which, effectually accomplished, would give him the best line of communications with the Continent, namely, a double line of railway, proof against all attack. Under every aspect of the question the existence of this tunnel would, I think, be an item which the would-be invader would write down as an element in his favour when making his calculations for the conquest of England, even if he despaired of being able to use it as the direct road for the advance of his troops in the first instance.

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*An Enemy contemplating Invasion would calculate on Dislike to destroy utterly such a Work.*—There is another consideration under this aspect which has to be taken into account, and which would certainly be taken into account by a country contemplating invasion. There is a strong popular feeling always against the destruction of great engineering works under the necessities of war. I remember that, when the Northerners, during the American war sunk vessels laden with stones in Charleston Harbour, there was a great outcry in this country against that act. It was at the time indispensable for the North, if they wanted to gain their object and preserve their existence as a united nation, to stop the running of the blockade of Charleston. But our newspapers exclaimed against the barbarity of injuring a great work of international importance merely for the sake of military success.

I think, therefore, that the tendency of England would be not to utterly destroy the tunnel by blowing it up so as to admit the sea through the crater of the mine, supposing that to be a feasible operation. I do not think that England would do that. I think she would probably persuade herself that it would be barbarous and immoral to destroy such a work utterly, and we should be persuaded by people interested in the tunnel and in the railways, who would say:

'Why, surely you would not utterly destroy this magnificent work for ever. Why not merely flood it, as that would answer all your purposes in rendering it temporarily impassable? and you can always destroy it hereafter if you think fit.' To men who were calculating the chances of invading England, the existence of the tunnel would on this account be an additional inducement for them to attempt it. For even supposing that the tunnel were not of much direct use to an enemy up to the time when his army had seized London, his eventual possession and perpetual retention of the tunnel and of Dover would place England for ever at his mercy, and preclude us from ever being able to revenge ourselves upon him. He would feel that, England once in his power, he would, with the tunnel in his possession, never have anything to fear from us in the future.

*The Tunnel would further induce Invasion by making Enemy sure of being able to prevent Punishment for his Attempt.*—It would be an inducement to them because it would give them a perpetual and unassailable line of communication. It is true that the enemy who had possession of London might impose terms which would cripple our command of the channel; but if the tunnel did not exist, in order to enforce the terms of the treaty they would have to keep a large army in England. For instance, they might require that we should not build above a certain quantity of armed ships; but, in order to enforce that, they would be obliged to keep a very large army here with which to threaten us whenever we began to infringe the terms of the treaty, whereas, with the tunnel for ever in their possession, they could at any time, when they liked, send 10,000 or 100,000 men, if necessary, through the tunnel and destroy our dockyards and the ships we were building. We might, as long as no tunnel had been made, adopt some such plan as that by which the Prussians evaded the conditions Napoleon made with them after Jena, when he restricted them to an army of only about 40,000 men; but when the tunnel had been made, the enemy in perpetual possession of Dover would naturally forbid us to attempt any similar contravention of our treaty on pain of once again seeing his hated army in London. Dover, with the tunnel behind it, would give the invader the key of the door of England, to come in whenever he liked: it would give him the entire control of the highway between the Continent and England.

*He would feel that he would have no cause to fear us after he had seized it.—And the result of a Successful Invasion would be our Permanent Ruin.*—I think, therefore, that this has to be taken account of in two ways. First, from the point of view which I have here been more immediately considering, it would tend to induce an enemy to invade, because he would feel that if he succeeded he would never have cause to fear us again, and that we could never punish him for his invasion; and, secondly, because it brings into prominence a very

important aspect of this question which has as yet been little considered. I allude to the respective effect which the successful invasion of England would have upon us as a nation whilst we still retain our insular security, and what it would be were we united with the Continent by a tunnel under the Channel. Let us examine this a little. If England were now successfully invaded, the enemy's army, having reached London, could dictate its own terms of peace to us. Let us assume those terms to be the payment of, say, 600,000,000*l.* and the surrender of our fleet. England is so small that it could be very easily overrun by a victorious army, for Woolwich—our one great arsenal—in his possession, we could not arm and equip a new army. We should have no other course open to us but compliance with these terms, but, in accepting them, we should have at least one grain of comfort and of hope left to us—for we should feel that we should thereby rid ourselves of the enemy's hateful presence. If we were worthy of our ancestors, there would be no good reason even then why we should 'despair of the Commonwealth.' If our spirit were healthy, we might still become once more a great nation. Having been caught napping once, we would surely take measures for protecting ourselves from any recurrence of the catastrophe that had befallen us, and would construct a new fleet, far bigger in proportion to that of other nations than we had ever possessed before. Possibly we might not be actuated by any craving for revenge, but we should, I hope, be influenced by the reawakening of that grand old national spirit which in former ages made us what we were—a spirit that would enable us to accept cheerfully the sacrifices we should have to make in order to pay for the creation of a new army and a new navy. With the successful invasion of England, under existing circumstances, we should well-nigh lose all except the power to re-establish ourselves again as a great nation; but the successful invasion of England after a Channel tunnel had been constructed would be our final destruction as an independent nation. Let us assume that the enemy's army were in occupation of the Thames from London to Woolwich: he would naturally demand, in addition to the terms already described, that the Dover end of the tunnel should remain for ever in his possession, in order to prevent us from ever again attempting to raise a new army or build a new fleet. He would naturally warn us, 'If you ever presume to infringe the terms we have now made with you, by attempting to create any new army or navy, we will send back troops here forthwith to bring you to reason.' The perpetual yoke of servitude would be ours for ever.

*As to Inadequacy of Means of Destruction.* (*a*) *Impossibility of keeping secret the Position of our Mines and Wires.*—To pass now to the means that have been devised to make it possible to destroy the tunnel if it be constructed. I think, in the first place, that it would be utterly impossible to keep the position of our mines

unknown. This would be known to all the railway people, and it would be known to the headquarter staff of every European army, who would also know the position of the batteries that were designed to ignite them, and where the wires went.

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Assuming that France were again governed by another Napoleon, or by a man with an equally low standard of morality, the inducement for him to invade England would be so enormous that it would be well worth his while to pay any price for the information about mines, &c., he might require. There can be little doubt that he would be able to find out every single thing about these mines by paying for it—even in virtuous England.

No two men were ever more loyally followed, or had more absolute authority, than Napoleon and Alexander the First of Russia. No two men had a stronger wish, or stronger motive, for keeping secret the words which passed between them personally in a most private conference on a raft in the middle of a river. Yet, by paying a large sum, our Ministry obtained the exact terms of the secret agreement the two had there arrived at. Moreover, our Ministry obtained that information so immediately that they were able to act in anticipation of the designs formed by the two Emperors.

What hope is there that we could keep any important information secret when, as was recently shown, a newspaper considered it quite right to publish a most secret minute written by statesmen whom it was at the time supporting, though its publication then was certain to inflict an injury upon the policy pursued by the Government of the country, and to be specially injurious to the party which the newspaper represented? I refer, of course, to the publication by the 'Globe' newspaper of the secret agreement between Lord Beaconsfield's Cabinet and Russia prior to the Berlin Congress.

Now, all the information about our mines and other precautions must be known to many poor men—much, if not all, of it to the employés of the Cosmopolitan Company. What hope is there that we could keep it secret year after year? What kind of comparison can be formed between the chances of doing this and the chances which one would have supposed there were that the secrets of the treaty of Tilsit should be kept inviolate for a few weeks? I believe, therefore, that in a few years, at all events, the position of all our mines and the direction of all our wires connecting them would be known to any one who cared to pay well enough for the information, as accurately as the highways and bye-ways of France were known to the Germans in 1870. Under those circumstances their existence would not trouble an invading general. He would know well how to provide against any risk from them.

*Inadequacy of Means of Destruction, continued.—(b) Scientific Men distrust Scientific Agents. Soldiers distrust Fortifications.—*

I now come to deal with another aspect of uncertainty in these our preparations for the destruction of the tunnel. Hitherto I have spoken of the steps which a soldier would naturally take to overcome the obstacles provided by science to his securing a passage. But here a most remarkable fact presents itself. While the most experienced military men all but unanimously deprecate our trusting to the absolute security of any fortifications, it is the men who have had most experience of scientific agents who deprecate most earnestly our trusting to the absolute certainty of connecting wires and of explosive mines or chemicals being ready for use at all times, under every circumstance, and for long years together. There is a very remarkable paragraph at the end of the report of Sir A. Alison's Committee, in which, after every form of possible mode of destroying the tunnel has been suggested, and in order to multiply the chances of successful destruction it has been expressly stipulated that all of them shall be applied together, not that some selections from them shall be made, the Committee deprecate most earnestly the trusting absolutely to the certain working of any such agencies. Since I have seen the report of the Committee I have referred the question, whether it would be safe to trust for many years together to long wires connecting batteries with distant mines, to a scientific officer, Colonel Webber, who was for many years in charge of all the telegraph wires of the post office throughout the south of England. No one has had greater experience than he in the practical working of such wires. After describing as 'audacious' any assertion that you could possibly depend on a wire, say from London to Dover, as actually available for use at some given moment after it had been laid down for years, he goes on:

'Naturally, the perpetual test, or that at short intervals, is the best, but there is no exaggeration whatever in putting a case, namely, that after years of what would be called good maintenance, with accurately and carefully conducted hourly tests, some day a good test might be obtained, at noon; in the afternoon it might be required to use the wire, and an ordinary electrical fault (and the causes are a hundred) having occurred in the interval, the result would be *nil*, and all the labour of years be lost, and perhaps disastrous results occur. I believe that great perfection in construction and maintenance of conductors can be had, but I would not rely on the best for such a momentous purpose.

'I think I have before expressed my opinion of the value of electric conductors for military telegraphy and given them their relative value and the amount of reliance a general should place on them for momentous purposes.

'Such an opinion as to conductors that are quite new and constantly in use, and receiving all the attention which the best *per-*

*sonnel* can give, must be largely modified when it refers to a conductor only destined to be used at one supreme moment.

'I could not say much for the opinion, or competence to judge, of any one who would quote the power of *daily or hourly testing* as giving any security, under the conditions I understand to be before Sir Garnet.

'Testing is simply the handmaid of ordinary or extraordinary daily or yearly maintenance.

'It would of the two be a wiser act for a general to leave the success of a battle dependent on a telegraph wire than for the nation to trust to a conductor between London and Dover, for the destruction of a tunnel at a supreme moment.'

It must be remembered that these remarks represent the views of scientific men speaking from their own experience of the continual liability to failure of scientific agencies under the most favourable conditions and during peace time; but in relation to this point I am disposed to add this much, part of which I quoted before the Board of Trade Committee from my own experience of these agencies under the stress of war.

*Yet Greater Danger of Rough Conditions of War Producing failure of Scientific Agents.*—I am aware that it is quite possible to design plans by which you could minimise the danger to a very large extent indeed. I fully appreciate the care and pains which have been expended by Sir A. Alison's Committee in multiplying methods of destruction. There might be a hundred different devices by means of which you might destroy the tunnel by petroleum if it was conveyed into the tunnel, or by water, or steam, or gunpowder, or dynamite. There are many ways by which you certainly could take steps to minimise the danger, but I have had so much experience myself in seeing all those beautiful arrangements which are devised beforehand for saving ships from sinking, or for exploding mines, which fail at the last moment when you require them to act or to explode, that I do not think you ought to depend for the safety of Great Britain upon any amount of mechanical contrivances. I have seen a series of the most carefully planned mines one after the other refuse to explode. And then, besides, it must be remembered that if I have seen mines fail to go off, they were mines that had been most carefully laid down, almost, you may say, at the moment when they were required to be exploded; they were not mines that had been charged years before. With mines prepared upon the chance of their ever being required for the destruction of the tunnel it is very questionable whether you could always keep them in perfect order, because the danger that I dread is a danger suddenly coming upon you, without any warning whatever. Then, as I have said before, I have no guarantee that all your electrical apparatus will be in perfect

order, or will be effective when you require it, or that your sluice-gates will be in perfect order, or that any contrivances which you have designed beforehand for rendering this tunnel useless will have any effect when you want them. I might also add, looking to the fact which I know from my own experience in all our military stations, not only at home, but, I might say, perhaps, all over the world, that during a time of profound peace all your arrangements are designed only for the contingency of war after long notice being given to you by a declaration of war; we have not a fort in England at this present moment that is capable of resisting a sudden attack. Our forts and military contrivances are not designed for emergencies: they are designed for cases where war is declared, and you have a long notice to complete your magazines with gunpowder, and your guns with all the small stores, &c., that they require, and to complete them with garrisons, and you have not men enough to garrison all our forts and batteries; indeed, we seldom keep even the soldiers we are supposed to have in them, much less the number of men who would be required continually to watch over the efficiency of these scientific agents.

These are among the many strong objections I have to relying upon the various ingenious contrivances which have been suggested by Sir A. Alison's Committee; they, from the nature of their instructions, were precluded from taking into account the possibility of a sudden seizure of all the proposed fortifications during peace time, and of a sudden cutting-off of all the wires. But no men could have expressed more strongly than they have done their sense of the danger of relying absolutely upon these securities after all that they could devise and all that they could suggest.

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*If in any Point the Defence fails it fails in All.*—And it must be remembered that, if in any one of these respects our security fails, it fails in all. If either our neighbour surprises us when we are not prepared for him, or if our scientific agencies fail to work, or if the security of our fortifications is not what some take it to be, our tunnel will one day be in an enemy's hands, and will from that moment be 'the most unassailable line of communications in the world;' for whatever line of communication you establish between your base of operations and your army in the front, in any campaign, or in any possible country, that line of communication is liable to be attacked. It has to be protected by great forces on its flanks, very often by large armies; but this tunnel bored down beneath the sea can neither be touched by an army nor by a navy from the moment its two ends, and the means proposed beforehand for its destruction, have been secured by the invading power. Your only chance of destroying this line of communications is to have done so before it is fully occupied.'

*An Unassailable Approach to England then passes into an Enemy's Hands.*—Every other kind and form of line of communications is the most vulnerable point of an army—that to which a general has to direct more attention than any other. The great art of strategy turns almost entirely upon the danger to which an army is exposed which loses its line of communications. To threaten that line is to determine the movements of an army. But the general who possessed Dover as a *tête du pont* and had this tunnel behind him, would laugh at any attempt you could make, even to threaten, his line of communications from England to the continent.

*When once Permission is given, the Danger will continually increase.—The Charges of the Mines will be withdrawn.*—I now propose to show that this danger, great as it would be from the day that the tunnel was constructed, would be an ever increasing danger. It must be remembered that if once this tunnel is permitted to be constructed, that single fact will be all that will be generally remembered hereafter; the grave discussion which had preceded the permission will all be forgotten; more and more the foolish fears of those who had pointed out the national danger will be only laughed at. It will be regarded as a decisive proof that all these fears were chimerical, that the tunnel was ultimately allowed. People would become nervous as to going through a tunnel with vaguely known dangers from the explosion of mines, &c., around them. It requires no prophetic gift to foretell that before long considerable pressure would be brought to bear upon the Government of the day for the withdrawal of these mines, which, we should be told, hurt the susceptibilities of our foreign friends, by marking our distrust of their good faith, their love for peace, &c., &c.; and if one Government can be found to sanction the construction of the tunnel itself, there is no reason why another should not, by-and-by, entail the additional risk to the nation of 'drawing the charges' from the mines designed for its destruction in case of need. Many specious arguments would be forthcoming in favour of this being done, and, being as a people curiously credulous as to the good faith of foreign nations, learning nothing even from all recent experience on this point, as we are a good, easy-going community, sincerely devoted to peace ourselves, and unable to understand how any other power can reason differently from us on the subject of war, we should, I think, be certain, sooner or later, to remove these mines.

*Many Tunnels will be Constructed.*—Then, again, when once one tunnel has been constructed, why should not another be allowed? Two schemes are already put forward; more would certainly follow.

*The Garrison will be Reduced at first during War, then Permanently; the sense of Danger will grow Less and Less, and all Precautions will be Neglected.*—In the first great war we were engaged in, a great strain would be put upon our resources in men.

The garrison, whose numbers, at an extreme minimum of 7,000 men, are absolutely indispensable to the security of a first-class fortress, such as is now proposed for Dover, would be gradually reduced. No fortress is less secure than one with very extensive works, but without men to hold them; yet the pressure of the moment would be felt, the danger to which the nation had been alive a few years before would have been forgotten. It is the invariable, the unbroken, rule in England. The men would be withdrawn. When peace followed they would not be replaced. Had not Dover been held by a smaller number during the war? it would be asked. Why retain a higher number during peace than during war time? Gradually our defensive works of all kinds would be neglected. The longer attack on Dover was deferred, the more absolute would the sense of security become. The nation would yearly grow to believe more certainly that what had not yet happened never would happen.

This is no fancy picture; it is as certain as the record of all past English history. But whilst this carelessness, which has become a part of our national characteristics, because of the security of our surrounding sea, would certainly continue, our sea would surround us no longer. We, the wealthiest, the most unwarlike nation of the world, would lie a tempting prey at the actual feet of the spoiler.

*Does increased Intercourse make Wars less frequent.*—But it is said that great facilities of intercourse would tend to make wars less frequent. I do not think so; at least my reading of history does not agree with that. I find that in late years, during which communications have been extended more than they were fifty years ago, there have been more wars than there were twenty years back.

I would especially ask anyone who thinks that wars have of late years become so few that they may be left out of account by practical politicians to study the short statement of the incidents which have led to hostilities preceding a proclamation of war which has recently been prepared in the Intelligence Department. When it is said that the fact that nations know one another better than they did formerly tends to make war impossible, I answer: We can only judge by experience, not from theory, and my experience tells me that previous to the year 1870 there were thousands and thousands of Germans all over France; they supplied the waiters in nearly all the hotels in the country; in fact, there was a considerable army of Germans in France, and yet that did not prevent a great war from taking place between France and Germany. The people who knew one another the best of all, I suppose, who have ever fought together, were the Northerners and the Southerners, who had railways without end joining them together, and yet a more bitter war has never taken place in the memory of man.

We have, since 1815, been repeatedly on the eve of a quarrel with France. We have repeatedly been in just that sort of position

towards France in which, if we are going to have all the warning we are supposed to have in order to blow up our tunnel, we ought certainly to have done it again and again. The conditions have several times been so strained that an unscrupulous Minister would have thought it quite legitimate to anticipate war by an act of hostility; and, if he had done so, he would not have treated us worse than we treated Spain on October 5, 1804.

*The Danger of Attack when the Sky seems Clear. Special Paper on the Subject.*—I do not propose to enter at great length into the question which was much pressed upon me by the Board of Trade, whether we have any reason to fear lest hostilities should break upon us out of a clear sky, because it was precisely in order to answer those inquiries that I thought it well to have the question carefully investigated. That has been done, and for answer I would refer to the historical sketch by the Intelligence Department which I have already mentioned.

If any one can rise from the perusal of that paper, with the conviction that it is safe to leave the existence of England as a nation to depend on our receiving long warning of war, I do not propose to discuss the question further with him. Our ideas of the value of England as a nation are too different to admit of our discussing the question with any advantage. At any rate I should myself reply with strengthened conviction. The existence of England in her entirely undefended condition—and she is quite as unprepared to resist a great war of invasion as Switzerland was at the time when the French seized it—would be, I think, to the mind of a man like Napoleon or Frederick the Great, or many other of those great conquerors who have risen from time to time in history, so great a temptation, that they would certainly not hesitate for one moment to invade the country or take possession of our tunnel suddenly, without any preparation whatever and in the clearest of all clear skies, whilst we were perfectly friendly, without the slightest notice, and without any strain whatever. The conduct of Frederick the Great in Silesia after he had sworn by all his gods to respect the monarchy of Maria Teresa, and many other instances—the facts of which are given in the paper I have referred to—may be cited as examples.

*Special Risk to our Commercial Prosperity of even possible War.*—I come now to another question, viz. the peculiarly delicate condition of our commercial life in England, which has grown up under the protection of our victorious navy and of our surrounding sea. I remember the evidence given by Lord Overstone upon that very point. He was asked what would be the effect upon England and the world of the capture of London by a foreign army. I have not refreshed my memory upon the subject for many years, so I cannot quote his exact words, but I remember he said the result would be so appalling that it was impossible even to estimate it.

*Lord Overstone's Evidence.*—I presume that when Lord Overstone gave the answer which I refer to, he meant that the successful invader would, from the intolerable strain the presence of a hostile army in London would impose upon us, be enabled to enrich himself to such an enormous extent, and to impoverish England to such a very great extent, that the result would be appalling; and that is what I should contemplate if London were to-morrow in the possession of the French army, with Dover and the tunnel at its back. They might ask you to pay off the whole of the French national debt, and they might not only insist upon this, but also upon the surrender of your fleet, and in order to secure themselves against any further trouble from you at any subsequent time, they would by treaty restrict your standing army to very small proportions. The ruler of France would say, 'In order to make sure that you shall carry out this agreement, I intend for ever holding Dover as a *tête du pont*, in the same way as the Germans now hold Metz, and as you—the English—formerly held Calais.'

My apprehension is this, that there may come a time when there may be a ruler in France who might deem it would be for his own advantage in a time of profound peace, without any notice, to take possession of the tunnel with the view of conquering England, and effacing England, or of levying a tremendous tribute upon England, in the same way as the invasion of England has been several times contemplated before. I know that it has been threatened. I know that it has been considered a very possible operation by the greatest of all generals. It is impossible during peace to estimate the circumstances and the motives that may lead to war. The question is whether the existence of England ought to depend on such speculations.

If all the probabilities in a great matter of this sort are to be gone into, one should, at the same time, take into consideration what is our own actual position of strength, and the military and naval strength of the nation that may possibly invade us. But this great question is not one that should be argued out as if it were any ordinary question of probabilities. If it be asserted that it is a question of comparative probabilities, it is necessary in calculating those probabilities, and their relative importance, that we should schedule the probable advantages and compare them with the possible dangers, so as to ascertain clearly what are the great advantages it is said we are to obtain by incurring a probable or even a possible danger.

The probabilities are on a sliding scale, as it were, and you must take that sliding scale in conjunction with a consideration of the possible dangers you incur; if the probable gain were realised it would doubtless benefit many individuals, but if those possible dangers ever became an experienced reality, the destruction of our

country would be the consequence. For the benefit of a few, we should entail the greatest possible danger upon the whole nation.

In fine, to sum up what I mean with regard to the use of the word probability, I would say, there is a danger necessarily attendant upon the construction of the tunnel—a danger to the national existence of England; the extent of that danger may be a matter of discussion, but most people will admit that there is a danger. The question I want to press home is this—Why should we add this new danger to those which already exist to us in England, looking at the subject from a military and a naval point of view?

I have already discussed the question of the great temptation which the increased facility that the tunnel would afford for the invasion of England would offer from the point of view of the diminished risk which an invader would have to face. I want now to insist further that, in the judgment of our most experienced commercial men, that danger is for England so appalling that our whole commercial system would be pricked like a vast distended bubble if even a serious risk were incurred of its coming into the region of fact. For my own part, on those points of the subject on which I may venture to speak with more authority than most commercial men, I believe that there is not only a remote possibility, but a very high probability, of its occurring if this tunnel is ever constructed. But even if I am wrong in this, I am very anxious that such evidence as that of Lord Overstone should be taken into account, so that it may be seen that even from the commercial aspect you have a very heavy account to balance against any possible advantage from the tunnel, if there be left even a shadow of danger.

Of course if I am also right in asserting that the danger will be an increasing one as time goes on, this will be an additional risk also under this commercial aspect. For, however profoundly our nation may sleep for years under the calm belief of its absolute immunity from danger, there will be a rude awakening, and capital is avowdedly a delicate commodity, easily scared, not easily coaxed back again into places from which it has been rudely driven by a fear of the rough touch of war.

This brings me to the question of panics. Already we are continuously liable to most unreasoning panics. They are panics which are mainly due to the blissful state of ignorance and security in which we ordinarily live. The nation is suddenly startled by some unpleasant event into realising what the actual military condition of its own neighbours is, and how different is the condition of England. These panics take place now. But what will happen when we place ourselves in a condition in which all those who have any experience of war can only tell their countrymen that the situation is a most dangerous one—that of an unarmed people joined by land to a continent in arms.

Suppose that this discovery comes home to Englishmen just at the time when we wake up to discover that a new secret treaty like that of 1870 has just been arranged between two foreign powers. What will be the result? I confess I have no doubt that the more all warnings are now pooh-poohed, the more all the facts that may be cited are ignored, the more certain is it that the nation will again and again be roused by the discovery that the facts are precisely what those whom it suits the convenience of certain promoters to call panic-mongers assert them to be. Then we shall have cries for costly and sudden increases to the army, which do not add much to our military strength and do add very greatly to our expenses.

We hear much of the panic-monger in the writings of those who favour the construction of this tunnel. But who is the real panic-monger? Is it he who would have us create a work that must be the prolific parent of panics, or is it the man who strives to warn his countrymen against such an error?

GARNET J. WOLSELEY,
*Adjutant-General.*

HORSE GUARDS, WAR OFFICE:
*ne* 16, 1882.

# *QUOTATIONS FROM THE PRESS.*

THE TIMES, *February* 15, 1882.

THE subject of the Channel Tunnel scheme has been so much before the public that it was natural that the Government should be questioned as to their views or intentions in regard to it. Mr. Gladstone had to answer last night a question regarding it put to him by Mr. Bromley Davenport. He did not give very explicit information, but he stated that the Government would see that the subject is completely considered. There is, therefore, a probability that the discussion will lead to useful results. It is but right that we should advert to the origin of the controversy. It has escaped the recollection of not a few of those who have lately been discussing the matter with animation that it is not quite new. The discussion began in our columns. In an article published on June 18 last we drew attention to the gravity of the matter, in a national point of view. We intimated that, while the construction of a submarine tunnel might be practicable as a piece of engineering, and might be an agreeable prospect to travellers on both sides of the Channel, other interests had to be thought of. The Government were bound to consider carefully what might happen in time of war. We directed attention to the danger that the tunnel might prove a weak spot in our defensive armour. The silver streak had been our safety in the past, and it was hazardous to link England with the Continental system of nations.

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From time immemorial our great line of defence has been the sea. Our national habits have been shaped by this fact. It has spared us the conscription of Continental nations, and has enabled us to dispense with a large standing army, and to be at ease while war raged abroad. Perhaps this long immunity has made us a nation somewhat unready and lacking in vigilance at the outbreak of hostilities. Let us suppose the tunnel constructed and in working order, and covered by fortifications. Would the country be, in a military point of view, as strong as it was? Will every soldier of eminence say that it is a practical impossibility that several thousand men could in time of war, or before it actually broke out, land and seize the English end? Is it a visionary fear that, owing to one of those mistakes common enough at the beginning of a war, the tunnel might for a few hours fall into the hands of the enemy? Military opinion is divided as to these questions, but on all hands it is agreed that if this calamity were to happen it might materially affect the issue of any war. A few days, or even hours, might suffice to place upon our soil a force outnumbering the troops whom we could oppose to it. We may be sure that every military student in Germany and France would have worked out a plan for seizing the tunnel, or utilising it to the utmost. Once seized by a small force, it would be a duct through which an army of 100,000 men might be drawn in a few days. These do not exhaust the

considerations which will present themselves to prudent minds. Large and powerful though our fleet is, it is not to be treated as an impossibility that a foe might effect a landing on our coast; and if this were to happen would his footing be more secure if he had the command of the tunnel, and were independent of communication by sea with his basis of operation. It is for military men, in studying this problem, to say whether a hostile force which happened to get a footing here might not make it good just by reason of the existence of the tunnel. Even if these arguments be unsubstantial, it rests with statesmen to reflect whether this new link with the Continent would not facilitate the recurrence of the panics of invasion to which as a nation we have been prone. It is desirable that the subject should now be studied with an eye to the gravity of the interests involved; and in the light of military arguments which were not before Parliament when it was previously invited to legislate in regard to it.

THE TIMES, *October* 13, 1882.

THE long-expected Blue-book containing 'Correspondence with reference to the proposed construction of a Channel Tunnel' has just been published. There are portions of it which will be read with an eager interest such as is rarely accorded to the contents of a Blue-book. It is many years since the question of direct railway communication between England and the Continent was first mooted. The idea in the abstract is captivating enough. To many persons it would add something like a new joy to existence to be able to go abroad without crossing the Channel, and thus it happened that for some time during its earlier and less practical stages the project found considerable favour. But as soon as the works on this side of the Channel were actually begun in earnest, and the country began to realise that the time was coming when it might be deprived of some of the protection afforded to it by the 'silver streak,' public opinion underwent a remarkable change. For this change we may take some of the responsibility. We have held it to be of importance that the momentous questions involved in the scheme of the Channel Tunnel should not be decided without full deliberation and discussion, and the papers now published in the Blue-book amply justify the views we have urged. The correspondence furnishes a history of the question from its earliest stages; but we need not here concern ourselves with anything more remote than the latest stage of all, during which the question has emerged into the full light of public opinion, and been referred by the Government to a mixed committee of experts, presided over by Sir Archibald Alison. This committee was appointed at the beginning of the present year, and its report, together with evidence tendered and documents submitted, constitutes by far the most important and interesting section of the papers presented in the Blue-book. The Committee was instructed to satisfy itself whether it was certain beyond any reasonable doubt that in the event of war or apprehended war the tunnel and its proposed approaches, under existing Acts and Bills at the time before Parliament, could be rendered absolutely useless to an enemy, and, if so, in what manner. It will be observed that the opinion of the committee was invited not upon the means of defence of any tunnel in the abstract, but of a tunnel or tunnels actually proposed or projected. This limitation of reference, however, is practically of no great moment. The question of a tunnel or tunnels actually proposed or projected may be held, under present conditions of engineering and finance, practically to exhaust the possibilities of Channel tunnelling. So far as it goes, therefore—and it will shortly be seen that

it goes a very long way—the report of the committee, though limited in reference, really covers the whole question. Its recommendations apply in substance to all possible schemes, and if they are fatal to existing proposals they are *à fortiori* fatal to any possible alternative.

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It results inevitably from the conclusions of Sir Archibald Alison's Committee that the construction of the tunnel would in certain imaginable contingencies give an overwhelming and indefeasible advantage to a successful invader of this country. This, in our judgment, is practically decisive of the whole question. As Sir Garnet Wolseley pertinently observes, 'in the commercial aspect even a shadow of danger would be a heavy balance against any possible advantage.' Von Moltke is reported to have said that he could think of a dozen ways of getting an invading army into England, but he could not think of a single way of getting it out again. The construction of the tunnel would in certain contingencies, not, of course, very probable, but very far from being purely imaginary, furnish the one way which the author of the saying, whoever he may have been, could not think of. The chances in favour of such contingencies arising may, of course, be almost infinitesimal, but the only safe way to test their reality is to ask whether they would materially affect the military, financial, and foreign policy of this country. There can, we think, be little doubt as to the answer. We should have lost the absolute protection of the silver streak, and there would always be an appreciable risk of our losing it altogether. A successful invasion of England might not be rendered much less difficult; it is always possible through our loss of the command of the sea. But with the tunnel the consequences of successful invasion would be incomparably more disastrous than without it. If an invader once held the tunnel and its commanding fortress—a contingency which Sir Archibald Alison's Committee declares cannot be rendered absolutely impossible—there is no reason, short of his own forbearance, why he should not hold it for ever. The fortress in the hands of a victorious invader would be to England as much as, and a great deal more than, Metz in the hands of Germany is to France. It will, of course, be said that such a contingency is too remote to consider. But the very necessity of defending the tunnel at all—a necessity which every sane man admits and insists upon—rests solely upon such a contingency, and it would therefore be an abiding factor in our whole national policy, financial, military, and foreign. If this is clearly borne in mind, it will be seen that Sir Garnet Wolseley hardly exaggerates when he says that no question of such vital importance has ever come up for serious consideration. Moreover, apart from the *haute politique* of the question, it is, perhaps, worth while to ask seriously what are likely to be the commercial prospects of a Channel Tunnel defended in the manner proposed by Sir Archibald Alison's Committee. Undermined by land, overmined at sea, sluice-ridden at its entrance, and liable to asphyxiating vapours at intervals, the tunnel will hardly be regarded by nervous travellers as a very pleasant alternative even to the horrors of sea-sickness. The mechanical arrangements for carrying out the various methods of defence are to be controlled, it will be remembered, from different points, both within the commanding fortress and at some distance outside. Chatham, and even London, are suggested as points of control. Who will control the controllers of these arrangements, and who will guard the connecting links from mischief, malice, or madness? The arrangements cannot be kept absolutely secret. There are very few political or military secrets, as Sir Garnet Wolseley reminds us, which are not purchasable. The points of control must be numerous and the lines of communication must be long, and the whole system of defence must for ever be at the mercy of blunderers, criminals, and madmen. It is true that we take somewhat similar risks in ordinary railway

travelling, but imagination counts for a good deal in such matters, and the terrors of the Channel Tunnel under an adequate system of defence might easily affect the imagination so strongly as to render the terrors of sea-sickness insignificant by comparison. We are, however, as yet a very long way indeed from having to consider this particular question as a practical one, for, unless we are much mistaken, the publication of the present Blue-book will be found to have closed the whole question of the Channel Tunnel for a long time to come.

THE DAILY NEWS, *February* 13, 1882.

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IT is somewhat noteworthy that neither set of projectors appear to have taken any notice of the very practical reminder of the military authority, that although Continental works of a nominally similar character do not involve an equally great reduction of national security, the defensive works considered necessary are always on the Continent erected at the cost of the adventurers for whose profit the enterprise is undertaken. On this point the most absolute silence seems to have been observed at both meetings. We may be told that invasion is a hobgoblin; that it is foolish to be afraid of it; that John Bull of to-day is of the same fighting quality as in old times. This is admirable as far as it goes, but it has the effect which Thackeray detected in the oratorical use of blank verse. It is not argument. Granted that John Bull's pugnacity is as nobly manifest as ever, why should he be called upon to exert it specially for the benefit of a Channel Tunnel Company? It is further said that the fear of sudden invasion implies that all courtesy between nations is to be at an end. Has the objector studied the history of the last hundred years, and if so can he point out many instances where a nation has been prevented by courtesy from making in war a bold stroke for an enormous and practically decisive advantage? It is said that the alarmist or cautious view presupposes absence of communication with Chatham. Is it proposed that the garrison of Chatham shall constantly be kept at a strength able to detach at a moment's notice a force able to retake Dover? If so it will make a considerable difference in the Estimates. It is said that France shows no signs of alarm. But it is scarcely reasonable to compare the immediate offensive strength of France and England as military Powers. There may be a satisfactory answer, from the military point of view, to the arguments advanced in the *Nineteenth Century*. When the counter-evidence of Sir Garnet Wolseley and Sir John Adye is published, the victory of argument may be found to rest conclusively with the latter. But at present no sufficient answer appears to us to have been given to the objections to the project on the grounds of secure defence and economy of military expenditure.

There is one point in connection with the project which deserves a good deal of attention. Let it be for the moment granted that really sufficient precaution is practicable, and that the threatened constant complication in Continental quarrels need not necessarily follow—can any one who is in the least acquainted with English character and history deny that at certain intervals panics on the subject of our safety would occur? Further, is any such person doubtful of the form which such panics would take? We should be constantly beginning expensive and elaborate schemes for strengthening the defences according to the fashionable idea of the day. We should vote a great deal of money for those schemes. They would be about half carried out by the time the next panic occurred, and then they would be obsolete, or at least out of favour,

and we should begin *de novo*. The 'Kingdom of Kent' would represent a new ironclad fleet to us—perpetually being tinkered, never perfectly ready, a constant source of childish panics and childish extravagance. Now it would be elaborate fortifications at Dover itself; now a great chain of forts to hem it in from inland; now the old scheme of the fortification of London; now the establishment of forts out at sea over the tunnel, so as to retain the power of blocking it if the end were carried by a *coup de main*; now the maintenance of a great garrison at Chatham to be ready for service on an emergency. This is a consideration to which the advocates of the scheme (who do not yet seem to have realised that what the public wants is calm and sensible discussion of its merits and demerits, and not talk about hobgoblins and John Bull) may be requested to give their attention. Is it worth while to run the chance, or rather to incur the certainty, of these scares with their consequent expenditure for the sake of a Channel Tunnel?

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THE DAILY NEWS, *February* 27, 1882.

SUCH a paper as that of Mr. Goldwin Smith[1] is perhaps more intrinsically interesting and important than the dicta of various military authorities as to the exact chances of the defence or the attack in the case of such a thing as a Channel Tunnel. These may be summed up with no unfairness as amounting to this. The apologist of the tunnel must admit that there is in any case a chance—an 'off-chance' perhaps—of danger; the enemy of it contends in the last resort for not much more than this off-chance. When therefore Mr. Goldwin Smith, who is certainly not an advocate of militarism, says that the immunity of these islands from invasion is of paramount importance to their political well-being, the minor premise to his major seems to be supplied by Colonel Beaumont as well as by Sir Garnet Wolseley. Mr. Smith further points out that treachery on the part of enemies is not such an altogether outrageous supposition; that the causes of war, though diminished, are still quite numerous enough, and that military security, 'though not the most beneficent of objects, must take precedence of the rest.' Now the apologists of the tunnel have hitherto signally failed to prove that it would not, in however problematical and far-off a manner, affect the military security of Great Britain.

We prefer, however, to rest the case upon the same ground on which we have hitherto rested it, a ground which Sir Garnet Wolseley has also taken, though not very decidedly, and which his opponents, as far as we have seen, have hardly attempted to mine or cut away. Let it be granted, even to the fullest of Lord Brabourne's desire, that the fear of an invasion is chimerical, childish, idiotic. Yet it notoriously exists, and it is fostered by persons who have nothing to gain by fostering it, who have no political or commercial ends to serve, who run the chance of some ridicule, and who, Europe being at peace, and the tunnel not yet made, have comparatively little hold on the public. Any one who looks at the matter dispassionately will see that when the tunnel is once made every one of these conditions will be changed, and that the change will be in every case in the direction of favouring panics. The statesman who is in want of a cry to gain or to secure power, the notoriety hunter who wants a hobby, the commercial gambler who wants to profit by the fluctuations of the Money Market, the professional soldier who wants a name, the contractor who wants a lucrative job, the quidnunc who gives his life to

[1] See p. 19, *ante*.

studying German and Russian newspapers; to all of these the Channel Tunnel and its admittedly irreducible minimum of increased national risk will be simply a God-send. Even supposing everybody to act with the purest intentions, it will be at least the occasion for the multiplication of mischievous and costly panics. Europe will not leave off fighting just yet, that is tolerably certain. Is there one single human being in the possession of his senses, and having some slight respect for veracity, who will deny that if there had been a Channel Tunnel in 1870 we should have had a panic about the fortifications of Dover, to say no more? That panic would in all probability have been repeated in the famous scare of 1875. It would certainly have been repeated two or three years later. There is no rational ground for supposing (Mr. Goldwin Smith has rather understated than overstated the case in this respect) that the political atmosphere of the Continent will be clearer during the next decade than it has been during the last. At every fall of the political barometer we should with a tunnel, and still more with the very probable two or three tunnels, have one of the idle, wasteful, mischievous fits of flurry and expenditure which, even as it is, have not been unknown in the past, but which have been often checked by the recollection of the 'broad wet ditch.' *Diruit ædificat* would be the motto. We should begin fortifications which would never be finished, buy up ground at fancy prices with the result of selling it for a song when the particular panic was over, give orders for hundreds of guns of some pattern which would be obsolete by the next qualm. The fears of Lord Dunsany and Sir Garnet Wolseley may be utter folly, but they exist, they are shared by hundreds and thousands of other people, and they are not of a nature to be quieted, but to be exasperated by the actual creation of the tunnel. Those fears, if Lord Brabourne and Colonel Beaumont have their way, will, as surely as day follows night, be worked upon and take shape in an intermittent but recurring series of panics, and in swollen military expenditure, which will do more harm than the tunnel can, according to the wildest anticipations of its promoters, ever do good.

THE DAILY NEWS, *March* 18, 1882.

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THE arguments against the tunnel have been stated often, perhaps often enough; but in face of the persons who by their own account 'continue to work daily, except Sunday, on their scheme, and ask every man and woman of influence to see what they are doing,' occasional restatement is probably advisable. The tunnel advocates have invariably endeavoured to prove that it would be very easy to devise means for rendering the tunnel impervious to an enemy. It has been as invariably replied, without any valid rejoinder that we have ever seen, that this entirely avoids the real question. That question is not so much military as economic, political, and in a way psychological. That numerous skilled and not imbecile persons deny the efficacy of the proposed devices may or may not be decisive against the fact of that efficacy. It is absolutely and finally decisive as to the probable rising from time to time of panics based on renewed doubts of it. Our children—we ourselves in ten or twenty years—may all be wiser, braver, taller men than Sir Garnet Wolseley, Lord Dunsany, and Mr. Goldwin Smith; but it is not on the whole probable that we shall be so much wiser, so much braver, and so much taller as to be entirely superior to fears which they entertain. For it must be remembered that the parallels of railways, steamboats, &c., on which the tunnel champions rely, fail in one all-important particular. A little

experience sufficed to show that steamboats did not invariably explode, and that people were not stifled by the rapid passage through the air of express trains. The *solvitur ambulando* process was for once conclusive and in place. But no length of negative immunity from invasion by a tunnel will prove that invasion is impossible. Therefore, human nature continuing as it is, it may be asserted that, with a Channel Tunnel, recurring panics, if nothing worse, are certain and inevitable.

What this recurrence means cannot be too often and too forcibly pointed out. It means constant alarm, constant expense, constant diversion of the national attention and the national purse from useful objects to useless ones.

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THE STANDARD, *April* 7, 1882.

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IF the Channel Tunnel is to succeed, it can only be as a private enterprise, for there is not the smallest pretext for asserting that any national advantage can accrue from it. As a private Company it must stand or fall, and its very existence is necessarily made dependent upon its compatibility with public safety. If the Committee, or the Military Commission, report that it would facilitate invasion, there is, *ipso facto*, an end of the whole affair. Even if no such contingency be contemplated, the Government must of necessity retain the right to destroy it at any moment, should the public safety make such a course necessary. Whether it is worth the shareholders' while to invest their money in a property of which they may at any minute be arbitrarily deprived is their own concern; all that the public care for is the assurance that national interests will not be compromised by private adventure. If the Channel Tunnel will pay, and is approved of by Parliament, it will be constructed, always supposing that the engineering difficulties do not become insurmountable. The Company are the only persons really interested in its success, and they must take the risk as well as the prospective profit. As yet not a tittle of evidence has been brought forward to show that the scheme can prove of any political or other advantage to the country, and there is no excuse, consequently, for asking the country to share in the risk or the expense. The argument which was brought forward that France and England, if allied and at war with the rest of the world, would find the submarine road useful, is too far-fetched to be worthy of serious consideration. Gloss it over as one may, the question narrows itself to this—Is the Channel Tunnel scheme a commercial speculation which may be safely permitted to be carried into execution? If it is, it will not be seriously opposed. The Direction of the South-Eastern Railway must really learn that there is a law even above great Railway Companies, and must be content to leave their project to the decision of Parliament, and the chances of the share market; they would also do well to recognise the fact that it is hopeless to pose as international benefactors on the strength of having started a new Joint-stock Company.

THE DAILY TELEGRAPH, *March* 31, 1882.

THE thoroughly national and most representative protest against the Channel Tunnel in the *Nineteenth Century* is a curious sign of the times. A visitant from another sphere, an observer from abroad, or a political Rip Van Winkle—not to quote Lord Macaulay's New Zealander, who is

as long in 'taking his seat' as if, like Mr. Bradlaugh, he had a difficulty about an oath—might be bewildered at seeing a national declaration on a great question of public policy appearing in the pages of a literary review. Long absence or imperfect knowledge of recent events might induce some apprehensive interrogatories. Why, it might be asked, are these eminent noblemen, men of science, bankers, philosophers, poets, bishops, Members of Parliament, editors, preachers, and priests compelled to take refuge in the hospitable pages of a periodical publication? Is the House of Lords suppressed? Has the Clôture forbidden the ventilation of the tunnel question in the Commons? Are public meetings put down? Are there no free pulpits? Is discussion 'burked' everywhere except in 'the Row'? Is the Habeas Corpus Act suspended in Great Britain as in Ireland? The subject-matter of the paper would also excite some surprise. A stranger coming upon it suddenly as his first token of English life might ask why such a topic should have fallen into the hands of a chance group of private gentlemen. Here, the puzzled observer might exclaim, is an impending national danger, raising a vast question of public policy and of the highest interest to the State. Is there no Cabinet to consider it? Have we a War Minister? Stands the Horse Guards where it did? Is there no ruler of the realm, no Lord Warden of the coasts? Have the Volunteers been all disbanded? Where is Lord Ranelagh? Where even are the police?

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England is very proud of her voluntary institutions. In no country excepting the United States is so much done by the united efforts of private citizens. Not only are millions of money raised by our benevolent societies, but the amount of organisation that exists independent of the State is enormous. Thousands of things done in other countries by the officials of the Government are here made matter of private energy and enterprise; even the industrial schools to which our judges consign young offenders are neither initiated nor managed by the State. There was a time when all the elementary education of the kingdom was under private control, and even still a large amount is carried on in schools that are inspected and indirectly subsidised by public authorities but are managed by volunteers. This system of personal initiative and uncontrolled energy has been so widely spread and with such remarkable results that it commends itself to the feelings of Englishmen. We ought, however, to draw the line somewhere, and it seems to us that the defence of England from invasion is a matter which cannot be entirely left to the editor of a periodical and his contributors, however varied and distinguished. State inaction arrives at a *reductio ad absurdum* when the safety of the realm awakens more anxiety in the minds of poets, philosophers, bankers, and priests than in Downing Street and Pall Mall. Yet the history of the project exhibits successive Cabinets in the attitude of Mr. Toots, who thought everything of 'no consequence, thank you.' Until Sir Edward Watkin began to dig and Sir Garnet Wolseley to sound an alarm, the distinguished gentlemen who preside over the destinies of England and are paid large salaries for minding John Bull's business saw no danger whatever in the project. When it came before Parliament in 1875, the Bill incorporating the Company was passed without official demur, and in 1876 the Government of Lord Beaconsfield concluded an agreement on the subject with the French Government of the day. The preceding Cabinet of Mr. Gladstone had the matter before them in its earlier stages, but it was not then ripe, and they may be excused for not having bestowed much attention on a badly-developed scheme. Lord Palmerston was the only English Minister who anticipated the unofficial objections now made. In 1857 the French engineer, M. Thome de Gamond, came to England and had an interview with the Premier on the subject. 'What!' said

Lord Palmerston to him, at once; 'you ask us to contribute to a work the object of which is to shorten a distance which we find already too short?' When the Prince Consort enthusiastically supported the project, Lord Palmerston said to him, without losing that perfectly courteous tone which was habitual with him, 'You would think very differently if you had been born in this island.'

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The tunnel can be made, and for that reason we must regard France with inevitable distrust. Let it be granted, and the concession is generous, that the invaders could never come through the underground passage, and could never capture our end by a *coup de main* or even a siege. Yet no military man will deny that a successful invasion of England, with the capture of London, Liverpool, and Manchester, is quite possible. In that case, with the country as prostrate before the enemy as France was in 1871, what is to prevent our being forced to sign a treaty of peace ceding Dover to our foes? It well might be that on that condition only could we buy out the 'men in possession,' and restore England to herself, but always thenceforth within easy reach of a renewed attack.

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THE DAILY TELEGRAPH, *October* 13, 1882.

AT length the official correspondence respecting the proposed Channel Tunnel, together with the report of Sir Archibald Alison's Committee, and the final memoranda of the Duke of Cambridge, Sir Garnet Wolseley, and Sir John Adye is in the hands of the public. A large number of letters have passed between the English and French Governments, a considerable amount of evidence has been taken before qualified personages duly appointed, and lastly a careful summary of all that can be said for or urged against the construction of the tunnel has been prepared by the Committee of Experts, the Commander-in-Chief, the successful General in Egypt, and the Surveyor-General of Ordnance. It may be at once remarked that Sir John Adye stands alone in the belief that the tunnel may be safely made. The experts under Sir Archibald Alison 'desire to record their opinion that it would be presumptuous to place absolute reliance upon even the most comprehensive and complete arrangements which can be devised with a view of rendering the tunnel absolutely useless to an enemy in every imaginable contingency.' Sir Garnet Wolseley, in a long and exhaustive paper, demonstrates that by the construction of the tunnel the great defence of the country, namely, the Channel, is destroyed; that the result must in any case be the increase of British military forces; that the tunnel, whatever precautions were taken, might be easily seized by stratagem, and that when once gone would lead to the destruction of English power and freedom. 'We hear,' he concludes, 'much of the panic-monger in the writings of those who favour the construction of this tunnel. But who is the real panic-monger? Is it he who would have us create a work that must be the prolific parent of panics, or is it the man who strives to warn his countrymen against such an error?' His Royal Highness the Duke of Cambridge takes a similar view. He shows how it would be practically impossible to defend the tunnel against all chance of surprise, and asks her Majesty's Government to consider whether the time when there was a prospect of war, and when an English Cabinet was hoping against hope to adjust its differences with a foreign Power, would be precisely the moment of all others which it would choose for ordering the temporary stoppage of the tunnel. And he 'most earnestly begs her Majesty's Ministers to pause ere they accept for the nation,

whose destinies are in their hands, a new element of danger that would threaten our very national existence.' Words so weighty and opinions so conclusive as these are not likely to be disregarded. England cannot afford to surrender her insular security to please any number of theorists or to foster the commercial speculations of a few interested and selfish individuals.

THE MORNING POST, *October* 13, 1882.

THE report of the committee appointed to consider the expediency of the proposed Channel Tunnel was issued in the form of a blue-book yesterday. All the weight of the evidence therein contained is in favour of the view which we have all along urged—namely, that such a tunnel would increase tenfold the risk of an invasion of England by a continental Power. The committee, while enumerating a variety of plans for the defence of the tunnel, adds that they 'cannot disregard the possibility that a long period of peace and uninterrupted tranquillity might engender carelessness and might lead to fortifications being so inefficiently armed or insufficiently manned as not to be secure against surprise.' Accordingly they declare their belief that it would be presumptuous to put faith even in the most comprehensive arrangements designed to render the tunnel 'absolutely useless to an enemy in every imaginable contingency.' If this is a just view of the case—and we believe it to be so—very little argument is necessary to show that the Channel Tunnel scheme ought not to have the slightest chance of being accepted, either now or hereafter. In the opinion of competent judges such a tunnel might in certain contingencies be useful to the enemies of England. It is idle to argue that these contingencies are very unlikely to occur. The fact that they may occur is quite sufficient to condemn the scheme which would render them possible. The invasion of this country is not a thing to be lightly risked. Most people think that under existing circumstances we are pretty safe from any hostile inroad. But even this is not absolutely sure. The unexpected frequently happens in war, and it is quite conceivable that by some unforeseen concatenation of circumstances we might find some of our most trusted defences no longer standing between an advancing enemy and London. But in such a case we should not be open to the charge of having wilfully promoted so great a disaster. Our fleet might be overpowered, our land defences might prove unequal to the task of keeping the enemy beyond our borders. But in neither case should we have reason to reproach ourselves with such a piece of blind folly as would be represented by the deliberate destruction of our most sure defence, the English Channel.

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It is easy to say that the tunnel should be stopped or some other precautionary measures taken 'when war is declared or when there is a prospect of war.' A declaration of war would probably be preceded by events which would render such a step impossible. And the Duke of Cambridge asks whether 'the time when there was a prospect of war, and when our relations with a foreign Government had reached a strained condition, would be the precise moment which an English Cabinet would choose for ordering even the temporary stoppage of the tunnel, an act which would be taken by the inhabitants of both countries as a sure indication of coming war?' The answer is of course obvious. Such a step would certainly precipitate war, though possibly without this specially exciting cause it might have been avoided. But after all, this is an aspect of the question of only secondary importance. The main objection to the

proposed tunnel is found in the fact that no imaginable contrivances could ever render it perfectly secure from capture. There would always be a chance that its defenders would succumb either to force or treachery, and in such case the invasion of England would be easier to accomplish than to repel. It is in view of these weighty considerations that the Duke of Cambridge feels it to be his solemn duty 'to warn Her Majesty's Government of the risk and danger which will be entailed upon the country by permitting, under certain circumstances, and even though all precautions have been taken, any tunnel to be constructed.' We trust that this warning is either not needed, or that it will be taken very seriously to heart by the persons to whom it is addressed.

THE MORNING ADVERTISER, *October* 17, 1882.

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THE Channel Tunnel has brought us practically in face of a question which had previously little more than a theoretic concern for us. We have amused or alarmed ourselves from time to time with visions of hostile fleets swooping down upon our shores, bent on making a spoil of the sacred isle. But the dream rather moved us with such pleasing fear as one well housed and warm feels in face of the storm-cloud gathering afar off, than troubled us with any serious alarm. Sometimes, no doubt, we took the peril to heart, but three or four generations have passed by since it really frightened us, and until the tunnel was pushed from the stage of idea to that of actual beginning, we rested secure in our superstition of the inviolate sea, and the impassable barriers set up by Nature herself for the protection of our most favoured nation. The issues raised as to the expediency of the proposed communication with the Continent, and especially the declarations of our military experts, have not only turned the public attention to the general subject, but have taught by far the greater number of us to understand more or less intelligently how greatly conditions have changed with us since Napoleon massed his army at Boulogne, since the Prince de Joinville talked of pouncing on us, or since that day, a few years later, when the fifty French colonels petitioned the latest of French Emperors for permission to annex the perfidious Albion. The effect of the controversy is more than this, for it impresses upon us with new force the character of the fortunate circumstances which constitute the cheap defence of the nation, and have enabled us up to now to look on 'serene amid the crash of worlds,' and conscious of our own security while our neighbour's house was afire, and things were going to wreck and ruin amid blood and fire at the very next door to us. It is a revelation to discover that a certain outlay of money, and the execution of an engineering work of no particular moment in this age of gigantic enterprise, would have the effect of wholly altering our national position, and destroying, or at least most gravely weakening, the grand defence which, it is our patriotic and poetic belief, the good genius of our country girdled her withal. The Blue-book dealing with the proposed construction of the tunnel brings this fact home to us, and does so in a manner which should dispose, once for all, of the project of a submarine communication between Great Britain and the Continent.

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THE PALL MALL GAZETTE, *October* 14, 1882.

THE publication of the Blue-book on the Channel Tunnel has revived a dormant controversy at a somewhat inconvenient time for Sir Edward Watkin and his friends. Two of the strongest arguments in favour of its construction have been, to say the least, considerably weakened by recent events. The permanence of the *entente cordiale* and the durability of the Anglo-French alliance, assumed so confidently a few months ago, can hardly be taken for granted to-day. The fears of the alarmists may be absurd enough; but no one can deny that the tunnel would increase the impact of every French threat upon the English ear. A time when we are attempting to turn a deaf ear to French recriminations and are preparing to ignore French protests is not exactly the season which Sir Edward Watkin would have chosen to reopen the question of the Tunnel. The second disadvantage to which he is exposed is the extent to which the recent war has justified the objections taken by English and Egyptian statesmen to the construction of the Suez Canal. It is not so many years since the 'folly' of Lord Palmerston, in deprecating the severing of the Isthmus, was a favourite topic with the advocates of the Tunnel. But the war has convinced a good many people that neither Lord Palmerston nor the Egyptians who opposed the making of the Canal were quite as much mistaken as it was the fashion to assume. The Suez Canal, no doubt, conferred great material advantage upon the world; but it has made Egypt more vulnerable than ever, and it has imposed upon England a costly and dangerous expedition, of which we have as yet by no means seen the end. The Suez Canal, therefore, can no longer be invoked as a conclusive argument in favour of the Channel Tunnel. It tells both ways, and proves that the facilitation of communication may be attended with political disadvantages which can be but imperfectly appreciated in advance.

Apart from these general considerations, the nature of the reports contained in the Blue-book are calculated to prejudice the public mind still further against the enterprise. Even Sir Edward Watkin himself contributes to this result—first, by his declaration that he refuses to admit the possibility of a war—'we civilians take a state of peace for granted;' and, secondly, by his admission that if war did break out it is quite possible that the French might seize the English end of the Tunnel by a *coup-de-main*, or by treachery, or even by temporarily reducing our Channel Squadron to decrepitude—a contingency which he regards as possible enough. 'The real danger,' says Sir Edward Watkin, 'is the preponderance of deep-water harbours on the other side of the Channel.' That, he says, 'is a very serious question.' Nor does the chief promoter of the Tunnel deny that his enterprise will add to the danger of invasion. Although he asserts that the addition will be but slight, he admits that it will be sufficiently appreciable to justify the erection of forts to protect the mouth of the Tunnel. The emphasis which he had previously laid on the dangers already existing which arise from the absence of fortified deep-water harbours on the English coast, and his remark that the expenditure of 6,700,000*l.* now being incurred by the French in completing their north-eastern harbours will compel the Government to do something 'in the way of counter-accommodation for the English side,' if we are not 'to be left helpless,' will certainly not predispose the public to increase, however slightly, the risks of invasion. The chief, almost the only, military authority who is in favour of the Tunnel, Sir John Adye, reports that the recommendations of the Committee are 'sound and practical.' The mere perusal of these 'sound and practical' recom-

mendations is not calculated to remove the uneasiness produced by Sir Edward Watkin's warning as to the 'real danger' of a descent upon our shores. We are told that it is imperatively necessary that the Tunnel must emerge out of range from the sea, under the command of the guns 'of a first-class fortress.' It must be so constructed as to be swept by works specially designed for the purpose. It must be barred by a portcullis; arrangements must be made for closing the air shafts, for filling it with poisonous gases, for choking it with shingle, for blowing up the approaches on the land side, for flooding it by means of culverts, and finally for blowing a hole in the roof so as to let in the sea. All the wires communicating with these mines must be duplicated and placed in safe keeping, not only in the first-class fortress, but also in one or more distant places. After reading all this portentous array of precautionary measures, one's breath is taken away by the concluding declaration of the Committee that, when all has been done, 'it would be presumptuous to place absolute reliance upon even the most comprehensive and complete arrangements which can be devised,' with a view of rendering the Tunnel 'absolutely useless to an enemy in every imaginable contingency.'

It is, however, unnecessary to discuss the question whether or not a work which requires such elaborate safeguards to render it innocuous ought to be constructed. Every one will agree that the Secretary of State for War was justified in declaring that the 'first charge and maintenance of all necessary works (to render the Tunnel absolutely useless to the enemy) will have to be defrayed by the owners of the Tunnel.' But when we turn to what even Sir John Adye admits to be the 'sound' recommendations of the Committee of experts as to the nature of these 'necessary works,' we find that this stipulation puts an extinguisher upon the whole scheme. The first imperative demand of the Committee is that the mouth of the Tunnel shall be commanded by 'a first-class fortress in the modern acceptation of the term;' that is to say, 'a fortress which could only be reduced after a protracted siege both by land and by sea.' Such a fortress would cost, according to the figures furnished by the Duke of Cambridge, not less than 3,000,000*l.* It would require to be constantly garrisoned by 7,000 men, involving an additional expenditure of at least 250,000*l.* per annum. The Channel Tunnel Company, therefore, would find themselves saddled with a first charge upon their revenues of half a million per annum, to defray the first charge and maintenance of the works necessary to render the Tunnel comparatively safe. It may, therefore, be taken for granted that no Channel Tunnel will be made until either the military experts have reconsidered their estimate of what is imperatively required to protect the mouth of the Tunnel, or the Government abandon the sound principle that the cost of constructing and maintaining the works in question is to be borne by those who make them necessary.

THE ST. JAMES'S GAZETTE, *February* 2, 1882.

LORD DUNSANY'S article in the *Nineteenth Century* will at least put a stop to the cry that military opinion is not against the Channel Tunnel. The larger part of it is written by Sir Garnet Wolseley, and Sir Garnet Wolseley is neither an alarmist nor a man unable to look at new ideas fairly. He is eminently a soldier of the modern type, and as such is not in the least inclined to be afraid of a thing merely because the Duke of Wellington would have been afraid of it. The opinion of Sir Garnet Wolseley ought to put a speedy end to the scheme. Not, of course,

because Sir Garnet Wolseley is necessarily in the right; but because there is sure to be a good deal to be said in favour of any opinion he has formed on a military question, and where the security of the country is concerned it is well to be on the safe side. If the question at issue were whether the Channel Tunnel would make us more or less safe, the case would be different. It would be clearly our business to make the country as secure as we could; and to do this we should have to consult the best military authorities, and be guided by the opinion of the majority. But the question is not whether the Channel Tunnel will make us more or less safe, but simply whether it will make us less safe or leave us just where we are. That is not a point upon which majorities ought to count for anything. The Channel Tunnel ought not to be made if there is any chance whatever that it will make the sea a less perfect barrier against attack; and it can hardly be denied that there is a chance of its doing so when Sir Garnet Wolseley declares that it undoubtedly will have this effect. The important thing to bear in mind is that national security is not a matter of balancing opposing calculations. If the arguments in favour of the tunnel are as 500 or 5,000 and the argument against it is as one, the tunnel ought not to be made. So long as there is a single military expert of any mark opposed to the project there is only one condition on which it can be right to go on with it, and that is that the solitary expert shall be converted.

There is another side to the question which would deserve careful attention even if this conversion had taken place and the tunnel were on the high road to completion. It is admitted even by the advocates of the tunnel that any fortifications necessary to the proper guarding of the English mouth must be constructed. Sir Edward Watkin, however, made no reference to the cost of these fortifications when drawing out his prospective balance-sheet. From this we infer that he intends the defensive works which the construction of the tunnel will render necessary to be made at the cost not of the Channel Tunnel Company but of the nation. In plain words, every single person who pays taxes, direct or indirect, will contribute a grant-in-aid towards the great public enterprise of keeping a certain number of well-to-do people from being sea-sick for an hour and a half twice a year. In a matter of this kind the Continental plan is obviously the right one. When a foreign railway carries its lines across the frontier it has to put up at its own expense whatever the military authorities think necessary in the way of fortifications. That is the natural thing to do under the circumstances, and it is inconceivable that any other course should be taken with the Channel Tunnel. Otherwise, we repeat, it would be constructed not at the sole cost of the shareholders, but at the joint cost of the shareholders and the nation. The shareholders would have paid for the making of it, the nation would have paid for building the fortifications without which it could not have been made. Or, to put the case somewhat differently, the cost of the tunnel will consist of the expenses actually incurred in making it and of the compensation which will have to be paid to the military authorities for the injury done to the security of the country. The shareholders are willing enough to take the former burden upon themselves, but they seem to think that the latter may be made over to Parliament. As soon as the tunnel is opened it will be the business of the representative of the War Office in the House of Commons to include in the Military Estimates the outlay necessary for making Dover impregnable alike by sea and land. It is only on these terms that the Channel Tunnel can be safely made, even in the opinion of those who think that, provided that this precaution be taken, it may be made. Consequently, the money which will have to be spent in taking this precaution is as much a part of the first cost of the tunnel and will as rightly be charged to the capital

account of the company as the excavation of the chalk or the laying of the metals. When this fact has been brought to the notice of the Parliamentary Committee, and they have amended the Bill by making it incumbent on the company to provide the additional fortifications at Dover which the tunnel has rendered indispensable, how will the question of dividend be affected? In these days of scientific artillery an unlimited order to Sir William Armstrong to make Dover absolutely proof against attack will represent a very large capital expenditure.

The plain truth of the matter is that the scheme, from a military point of view, is a mad one; and that, this being so, it cannot be too soon abandoned. The Government have given it too much encouragement already, and if they allow it to go any further they will be bound in common honesty to make good out of their own pockets whatever additional loss the shareholders may incur.

THE GLOBE, *October* 13, 1882.

THE long-awaited Blue-Book, issued yesterday, of correspondence with reference to the proposed construction of a Channel Tunnel will be studied with an interest that will be found amply justified. To condense all the branches of so complicated a question within anything like a short compass is obviously impossible, but we think that the main practical result can be stated very shortly indeed. The proposed Channel Tunnel is a financial question. The scientific committee consider it imperative that the tunnel should emerge in the immediate vicinity of a first-class fortress, in the modern acceptation of the term—'a fortress which could only be reduced after a protracted siege by land and sea.' What would such a fortress cost? The Commander-in-Chief is unable to estimate the cost at less than three millions as an improbably low minimum, and his calculation certainly cannot be taken as erring on the side of excess. Then this first-class fortress would necessitate a garrison of from seven to ten thousand men, not taken from the present strength of the army, but constituting a permanent addition. All this appears to be unquestionable. It is equally clear that the country cannot be called upon to spend many millions upon the construction and establishment of a fortress, and the maintenance of an equivalent garrison, for the benefit of a private company.

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THE ECHO, *October* 14, 1882.

WHATEVER the merits of his scheme and its final fate, Sir Edward Watkin is probably by this time convinced that the present Parliament is not likely to allow him to continue his boring operations under the Channel. Although there has been no division, or even debate, upon the subject, the feeling of the House is rather against the construction of the proposed Channel Tunnel; and even had it been otherwise it may be doubted whether the Government would have acquiesced, in face of the vehement protests of the military authorities. A Blue Book just published contains the military evidence taken by the Committee appointed in February. This Committee was instructed to satisfy itself as to the practicability of effectually closing in time of war any Tunnel that may be constructed between France and England, and how it is to be done. The Committee explain how the Tunnel could be destroyed in a few minutes; but then they go on to say that 'it would be presumptuous to

place absolute reliance upon even the most comprehensive and complete arrangements which can be devised with a view of rendering the Tunnel absolutely useless to an enemy in every imaginable contingency.' In other words, no precautions could save the country from the risk of surprise, or the possible failure of machinery at the critical moment. Sir John Adye is the only soldier of reputation examined by the Committee who sees nothing to be alarmed at in the idea of a Tunnel. 'Even supposing,' he says, 'that a certain amount of danger were caused to this country by the construction of a Submarine Tunnel from France, I do not think that circumstance in itself would be a sufficient argument against its construction. The advantages of increased intercourse between the two countries, and the facilities for commerce, &c., may be so great as to overbalance the possible disadvantages.' But then he goes on to argue that, just as the Continental Powers, instead of interdicting the network of railway, road, and river communications which connect them with each other, confine themselves to minimising the dangers arising therefrom in times of war 'by obvious military precautions,' so England will have to do the same when the Tunnel is completed. This can only mean, either that there would have to be a fortress of the first class at the English end, or that our army would have to be put upon the Continental footing. The people of England certainly would not consent to the one alternative, and it may be questioned whether they would agree to the other. A first-class fortress, says the Duke of Cambridge, would cost at least four millions to construct; it would require a garrison of at least ten thousand men; and the pay and maintenance of this garrison would be an absolute addition to the Military Estimates of the country. 'You join us on to the Continent,' writes Sir Garnet Wolseley, 'and we must, in my opinion, when so joined on to the Continent, sooner or later, if we wish to remain an independent people, become, like the Continental nations, a Military Power.' With these opinions Sir John Adye agrees; but then the prospect of our becoming a Military Power does not alarm him, and he thinks the increased intercourse with France might be a sufficient compensation.

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Whatever may be said on the other side, and very much might be said, it is not unlikely that these expressions of opinion, coming from such influential quarters, will induce the Government to declare itself against the Tunnel when the House is asked to arrive at a decision on the subject. And whatever may be the advantages of a tunnel route to France, there can be no question that it would be dearly purchased if it involved anything like a standing army on the Continental pattern, or even the erection of an enormous fortress, with an addition to the strength of the army of 10,000 men. It is not necessary to show that the army or the fortress would be required in order to arrive at the conclusion that Sir Edward Watkin must be content to wait awhile. If only the military authorities could induce the Government and Parliament to believe that such an addition to our military strength was indispensable, we should be paying a big price for the privilege of travelling to France by rail. And there can be no doubt that such representations would be made and acted upon. Even then we should not be safe from panics. As it is we are continually liable to them. What would it be with a Tunnel between the two countries? 'We hear much,' writes Sir Garnet Wolseley, 'of the panic-monger in the writings of those who favour the construction of this tunnel. But who is the real panic-monger? Is it he who would have us create a work that must be the prolific parent of panics, or is it the man who strives to warn his countrymen against such an error?' It may be that too much has been made of this fear of panic. As to that, experience alone can decide. But before the Channel Tunnel promoters

can hope to have their way, they must do what they have scarcely done yet—namely, convince the country that, despite all drawbacks, it is likely to be a substantial gainer by submarine communication with France.

THE MANCHESTER GUARDIAN, *October* 14, 1882.

THE report of the Channel Tunnel Committee puts an end to all prospect of Sir Edward Watkin's being permitted to proceed with his scheme. The conclusion arrived at by the Committee is that 'it would be presumptuous to place absolute reliance upon even the most comprehensive and complete arrangements which can be devised with a view of rendering the tunnel absolutely useless to an enemy in every imaginable contingency.' This is an opinion which is shared by the great mass of naval and military officers, and, as the signatures to Mr. Knowles's protest have shown, it is the view also of a great body of men of recognised reputation in politics, in science, and in literature. It would be unpardonable rashness on the part of the Government or Parliament to offer any encouragement to a project which is regarded with such strong and general alarm. Of the experts who have been consulted in connection with this inquiry, only one, Sir John Adye, who has recently been serving as Chief of the Staff in Egypt, declares in favour of the tunnel. In his judgment 'nothing is more obvious than the facility with which the tunnel can be denied to an enemy by means which no vigilance on his part could prevent or remove.' Another distinguished officer, Sir Andrew Clarke, the Inspector-General of Fortifications, is known to be equally unmoved by the arguments which have proved fatal to the project, but his advice was not, it would appear, sought on the present occasion, and Sir John Adye, therefore, figures as the solitary defender of the view that there has been a wholly unnecessary panic on this question. The strategical part of the argument against proceeding with the work will, no doubt, come with a convincing force upon a very large proportion of the people of this country, but we must confess that we find nothing in the Blue-book which in conclusive weight at all approaches one of the considerations which Sir Garnet Wolseley presses in his memorandum. 'We hear much,' says the vanquisher of Ourabi, 'of the panic-monger in the writings of those who favour the construction of a tunnel. But who is the real panic-monger? Is it he who would have us create a work that must be the prolific parent of panics, or is it the man who strives to warn his countrymen against such an error?' Here we have what seems to us to be the decisive reason against the scheme. The boring of a tunnel under the bed of the Channel would undoubtedly intensify all alarms of invasion whether groundless or well grounded, and this fact being certain, nothing more is needed to guide the Government to a decision.

THE MANCHESTER EXAMINER AND TIMES, *April* 17, 1882.

ALTHOUGH nothing new can be said upon the Channel Tunnel controversy, and though the rival schemes for tunnelling the Straits of Dover may already be said to be doomed, it is still worth while to point out that those who have opposed the scheme of Sir Edward Watkin are supported in their views by one of the most experienced of German strategists. It is not so long since that we pointed out that the military advisers of Napoleon III. argued strongly, alike in the interests of France and

England—that is to say, in the interests of peace—against a submarine passage between our islands and the Continent. From the point of view of Napoleon's military counsellors, the security of France was the first object they had in view. The thought of the invasion of England gave the Court at the Tuileries very much less concern than the thought of an English invasion of France, and that is an incident in history which the *Temps*, with some few other papers, seems to have forgotten. But all that the opponents of the tunnel project have said finds abundant confirmation in the views expressed by an eminent staff officer of the German army in an article he has contributed to the staff organ, the *Militar Wochenblatt*. It is not so easy to say that this impartial commentator raises new points for consideration as that he puts the familiar points in a new and even stronger light. He looks at the project, not as a German or a Frenchman, or as one who is in any sense an enemy. He is the neutral critic of a great engineering scheme, and he condemns the scheme for reasons which are worthy of attention, coming as they do from a German soldier, and confirming as they do the views of the foremost military men we have among us. It is not for the German commentator to tell us that the construction of the tunnel would fill the country with fears and panics, and possibly lead to a doubling of the number of our forces. He hits the mark in his query as to whether the defence of the British Islands would be strengthened or weakened by the construction of the tunnel; and he contends that, for the impartial critic, there is only one possible view, which is that of Sir Garnet Wolseley. Supposing, he asks, that all necessary precautions were taken to blow up or flood the tunnel at the moment of danger, where is the guarantee that at the given moment the machinery to this end would not turn out to have been rendered by corrupt hands, or otherwise, useless? The Channel Tunnel, moreover, might in certain contingencies completely paralyse the defensive action of the British fleet; for supposing an enemy —say, the French—to have got possession of the submarine road, in what way could the armed vessels prevent the island from being filled with hostile troops? As for the question of neutralising the tunnel, the writer doubts whether all the European Powers would agree to guarantee it. 'Besides,' he adds, 'has not recent history demonstrated the worthlessness of parchment treaties? The military objections to the submarine railway will only lose their force and application when England adapts her army system to that of the Continent. But years must elapse before that could be effected, and meanwhile the tunnel might become to England what the wooden horse was to Troy. With the present swarming intercourse between France and England, nothing could be easier than to seize the Dover end of the tunnel by a *coup de main*, and as for the rapid debarkation of French troops, look at the way in which Napoleon gained a footing in Egypt in 1805.'

THE MANCHESTER EXAMINER AND TIMES, *October* 14, 1882.

THE most interesting portion of the Blue-book which has just been issued on the Channel Tunnel controversy will be found in the ably-reasoned memorandum of Sir Garnet Wolseley. The views of so experienced an engineer and strategist must in any case be of value, and now that we have them in the official form in which they were offered to the Government, it is the least of all tributes to the thoughtfulness of the writer to say that they are deserving of attentive study on the part of the supporters of the Channel scheme. Sir Garnet Wolseley admits that when he made his commentary on the report of the independent com-

mittee appointed by the War Minister, he was opposed, on military grounds mainly, to the scheme; and he adds that, as he read the report, his conviction was strengthened that the hour when the tunnel was sanctioned would be a disastrous one for England. In support of this opinion he has written an exhaustive essay covering twenty-eight pages of the Blue Book, which, it seems to us, meets in a sufficient manner and with replies that we cannot wholly reproduce here, most of the arguments with regard to increased facilities of communication, and the like, promoting the amity of neighbouring nations. Sir Garnet writes as a scientific soldier on the military aspects of the question, and from his point of view sentimental considerations have naturally less weight than the dangerous contingencies he recognises as at least possibilities in the future. An indestructible line of communication, which could not be attacked above ground, and which, under the conditions of the country, was not likely to be destroyed beneath the sea before the war clouds had broken into lightning, would for its first effect make it necessary that we should, like our Continental neighbours, become a military power. There would otherwise, as Sir Garnet Wolseley points out, be the danger that the French, or whoever for the time being held the Calais end of the tunnel, could by a *coup de main* seize our end of it, and the very moment they had done so, Dover would become a *tête du pont* for their pioneers, from which they could issue forth with any large army they chose to bring through the tunnel. From that moment, he says, we should cease to be an independent Power, as we have no army in England, nor could we raise an army, that would have the slightest possible chance, under any circumstances whatever, of enabling us to withstand a French force or force of other nationality of the character that could be poured into the country. The circumstance that one of our most eminent generals regards all this as possible is a matter of some moment. It is, indeed, as he suggests, a serious question whether the increased military establishments, the peril of recurring panics, the nervousness excited among the people, would not, even if there were no actual danger, be too heavy a price to pay for the privilege of being carried from Dover to Calais in twenty-five minutes.

THE BIRMINGHAM DAILY GAZETTE, *October* 16, 1882.

THE report of the committee appointed to consider the expediency of the proposed Channel Tunnel has recently been issued in the form of a Blue-book. All the weight of the evidence therein contained is in favour of the view that such a tunnel would increase tenfold the risk of an invasion of England by a Continental power. The committee, while enumerating a variety of plans for the defence of the tunnel, say that they 'cannot disregard the possibility that a long period of peace and uninterrupted tranquillity might engender carelessness, and might lead to fortifications being so inefficiently armed or insufficiently manned as not to be secure against surprise.' Accordingly they declare their belief that it would be presumptuous to put faith even in the most comprehensive arrangements designed to render the tunnel 'absolutely useless to an enemy in every imaginable contingency.' If this is a just view of the case, very little argument is necessary to show that the Channel Tunnel scheme ought not to have the slightest chance of being accepted, either now or hereafter. In the opinion of competent judges such a tunnel might in certain contingencies be useful to the enemies of England. It is idle to argue that these contingencies are very unlikely to occur. The fact that they may occur

is quite sufficient to condemn the scheme which would render them possible. The invasion of this country is not a thing to be lightly risked. Most people think that under existing circumstances we are pretty safe from any hostile inroad. But even this is not absolutely sure. The unexpected frequently happens in war, and it is possible that in the future we may have cause to bitterly reproach ourselves if we are guilty of such a piece of blind folly as would be represented by the deliberate destruction of our most sure defence, the English Channel. . . . . It is easy to say that the tunnel should be stopped or some other precautionary measures taken 'when war is declared, or when there is a prospect of war.' A declaration of war would probably be preceded by events which would render such a step impracticable. And the Duke of Cambridge asks whether 'the time when there was a prospect of war, and when our relations with a foreign Government had reached a strained condition, would be the precise moment which an English Cabinet would choose for ordering even the temporary stoppage of the tunnel, an act which would be taken by the inhabitants of both countries as a sure indication of coming war?' The answer is obvious. Such a step would certainly precipitate war. But the main objection to the proposed tunnel is found in the fact that no imaginable contrivances could ever render it perfectly secure from capture. There would always be a chance that its defenders would succumb either to force or treachery, and in such case the invasion of England would be easier to accomplish than to repel. In view of these considerations the Duke of Cambridge feels it to be his solemn duty 'to warn Her Majesty's Government of the risk and danger which will be entailed upon the country by permitting, under certain circumstances, and even though all precautions have been taken, any tunnel to be constructed.' It is to be hoped that the publication of this report will render the execution of Sir E. Watkin's scheme impossible.

THE BIRMINGHAM DAILY POST, *October* 14, 1882.

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THE Duke of Cambridge, in order to remove the impression that a nation is in no danger of attack excepting when war is declared, encloses with his memorandum a paper, based on historical instances, showing how much more frequently invasions have commenced during diplomatic correspondence than after international relations have been broken off, and how often fortresses have been captured by surprise, because their defenders were unaware of their being in danger of attack. He also points to the risk of treachery, and after alluding to the ill-organised and badly managed Fenian inroad on Chester Castle, asks who can guarantee us against a seizure of Dover by persons within acting in concert with an enemy on the other side of the Channel. He further declares it as his opinion that no delusion can be greater than to imagine it possible for our volunteers and militia to stand up successfully against a regularly trained and well-organised army landed on our coast. Moreover, he agrees with Sir Garnet Wolseley that the mechanical contrivances would be liable to fail just when they were required, and also that the very existence of the tunnel would be productive of those invasion panics which are so injurious to commerce, and so calculated to foment ill-feeling between neighbouring countries. We may not admit that all these arguments are as forcible as their authors believe, but, with all allowance that can be made, they seem quite sufficient to show that the tunnel would involve us in trouble, expense, and anxiety, far greater than would be compensated by any

advantage it would confer. Its construction would save half an hour or so in communication with the Continent, would spare sensitive passengers from the discomfort of sea-sickness, would possibly reduce by a small amount the freight on exported goods, and would enable a body of shareholders to enter upon a new speculation with the chance of profit and of loss equally balanced. It would, on the other hand, compel the country to erect and maintain a strong fortress, to keep an army always on the watch, to provide literally infernal machinery for blowing up, drowning, suffocating, and asphyxiating passengers, and, after all, to be always at the risk of a foreign army stealing a march upon us, and having to be met, in the absence of a sufficiently powerful force at home, by a general rising of the volunteers, the militia, and the people! It is obvious that the end would not repay the means necessary for its accomplishment. These scientific reports have practically settled the question. They have yet to be adjudicated upon by the Government and by Parliament; but they will satisfy the public that we had far better continue to rely on the tried protection of the sea, with its petty inconveniences, than create a condition in which we should have to depend upon a set of artificial precautions, liable to break down when most wanted, easily evaded by treachery or surprise, antagonistic to our national traditions, and calculated to saddle us with far more expense than conveyance by the tunnel could save.

THE SCOTSMAN, *February* 27, 1882.

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THE great and secure defence of Great Britain lies in the sea by which she is surrounded. A million of men on a land frontier would not be so efficacious in preventing invasion as this 'silver streak.' It is certain that the British people are of this opinion. They are not, as the late Lord Beaconsfield said, 'sea-sick of the silver streak.' They recognise in it a sure protection against the covetous inclinations of great military Powers. It is in their eyes the guarantee that no invader's foot will tread our soil, and the great shield behind which we can continue in the peaceful pursuits of commerce. All the suggestions that have ever been made as to invasion have been based upon an assumption that everything must be favourable to an enemy and unfavourable to ourselves. He is to have ships more than he wants; he is to command the winds that they shall not blow, and the waves that they shall be smooth. Our navy is to be extinct or scattered; our soldiers at home, both regulars and Volunteers, are to be paralysed for any endeavour to prevent the disembarkation of his troops. Steam and electricity are to be of use to him and of no use to us. All this seems to be highly absurd, and so far the common sense of the nation has prevailed against it. But there is a possibility that a change would come about if a tunnel were made through which an army might march dryshod to our shores. For practical purposes the sea would be annihilated: at one stroke its natural barriers against an enemy would be swept away. This is a change of very serious importance, and its effects, or its possible effects, ought to be most carefully thought over before it is made. On the one side there is the shock to our sense of security; on the other, the advantages of carrying passengers to or from France more expeditiously, and without the fear of sea-sickness. It is difficult to overrate the importance of making our means of communication with other countries ready and rapid; but in all cases the cost must be considered, and here is where the project of the Channel Tunnel raises doubts. Will it, or will it not,

increase the dangers of invasion? and even if it does not, will it, or will it not, increase the demand for more military strength in the country? If the first of these questions be answered in the affirmative, the second must, as a consequence, have a like answer. But it is possible, indeed, it is most probable, that even if the first question be negatived, the second cannot.

As to the increased danger of invasion, there is as much to be said for it as is involved in the fact that the tunnel will substitute a land communication between England and France for the sea, which now bars the passage between the two countries. It is obvious that this must make additional precautions necessary, and they must be precautions which have regard to possible breach of faith by other Powers. There is no necessity to assume, as Sir Garnet Wolseley assumes, that at some period of profound peace France might be seized with a desire to loot London. That is possible; but it is in the last degree improbable. Still there is high authority for the proposition that the sight of means to do ill deeds makes deeds ill done; and unquestionably the people of this country would desire to feel, in the event of a tunnel being made, that it was made safe against any surprise, and that there were means readily available for meeting a foe who might get possession of the tunnel. Men insure their houses, not because they believe there is danger of fire, but because fire is possible. Would not the same feeling make the nation desire a great increase in our military force if the tunnel were made? It seems probable that the demand for such an increase would be made, and that it could not be resisted. If that be so, there is a distinct issue raised, and it will have to be considered by Parliament and by the public. Would the advantages of the tunnel to the nation more than compensate for the increased taxation necessary to make the nation safe? In deciding this question, nothing need be thought of the interests of those who are ready to make the tunnel. They would, doubtless, receive a handsome return for their outlay. But the nation is not called upon to tax itself that they may make dividends. It has a right to ask whether, for all practical purposes, it could not get what it wants without being put to so much annual expense. Three or four millions a year spent in military preparations would be a great price to pay for escaping a sea passage between Dover and Calais. In his paper in the *Nineteenth Century*, Mr. Fowler indicates a means of improving the present communication without incurring any of the risks, real or imaginary, of the tunnel, and it may be well to consider what he proposes before deciding that a tunnel is indispensable. In any case, the matter is one that should be carefully thought over by the public before coming to a decision. Without having the slightest sympathy with the alarmists, who are always in fear for their country, it may yet be said that haste in regard to the tunnel would be very unwise. The arguments used the other evening in the House of Lords by that wonderful politician Lord Brabourne are not worth anything. The British people have to think of their own safety and interests—not of what the French may think of them. At present the alarmists are kept at bay by the demonstrable security which the sea affords. Remove or lessen that security, and they will become so much stronger that it will be difficult to resist their demands.

THE SCOTSMAN, *March* 31, 1882.

SELDOM has a more remarkable document been seen than that published in the current number of the *Nineteenth Century*, in reference to the proposed Channel Tunnel. It is a protest against the tunnel, which has

been signed by many men of all shades of political thinking, and of all sorts of callings. There are among the signatories men who are professional alarmists—that is, who are always dreading invasion from somewhere. But there are others who cannot be placed in this category —men who are accustomed to believe that the British people can defend themselves, and that there is not a perpetual desire on the part of Continental Powers to have an opportunity of sacking our cities. This curious meeting of contraries is worthy of some attention. It seems to be conclusive against the tunnel. On the one side there are men who picture to themselves great French armies swarming through the tunnel to our shores. They see all their fears of invasion about to be realised. They can conceive a hundred ways in which the invasion may be carried out, and they see in the tunnel the means by which a successful invader can hold what he gets. To all suggestions that the tunnel could be blown up, or flooded, or filled with choke-damp in a few minutes they turn deaf ears. To them such means of making the tunnel useless are absurd. They reply that orders to carry out any of these preventives may fail, and the mischief be done. Anyway, they are against the tunnel. It is necessary to keep the views of these alarmists in view, because they are the justification of the opposition which men of calmer minds offer to the undertaking. It is safe to say that Professor Huxley and Mr. Herbert Spencer do not share the fears of those who think invasion likely; but they know that the expression of these or like fears has given rise to panics which have cost the country millions of money, and brought us sometimes to the brink of war. Here is the strong reason why the Channel Tunnel should not be made, and here is the cause why the signatures to the protest are those of men who widely differ. The alarmists sign because they are alarmists; the non-alarmists sign because they do not wish the country to be alarmed. It is open to the public to agree either with the one or the other; but it is scarcely possible for anyone without prejudice to come to the conclusion that both are wrong, and that the tunnel ought to be made. It would be necessary to show overwhelming advantages likely to arise from the tunnel to justify the setting aside of the objections on one side and the other. So far as can be seen, there are no such overwhelming advantages. Sea-sickness would be avoided by passengers between France and Great Britain, and there would be some transference of merchandise carriage from shipping to railway; that is all.

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THE DUNDEE ADVERTISER, *April* 8, 1882.

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IT is of the utmost importance that this question should be fully and calmly considered before the project is allowed to go on. The advantages of the 'streak of silver sea' are known and appreciated, and the nation cannot wisely consent to throw away these advantages unless it can be shown that the benefits to be received in return are of greater value. Some of our greatest military authorities believe that the tunnel would be a real source of danger, and even though the danger were less than alleged there can be no question about the evil effects that might from time to time ensue from an invasion panic. Increased facilities for commercial intercourse might be dearly purchased by an increase in the invasion panics from which we have recently been fortunately free. Sir Edward Watkin said that during the next hundred years it was very unlikely that France and England would be at enmity. This is a 'pious opinion' that may commend itself to those pecuniarily interested in the scheme, but it will hardly satisfy the general public. At the same meeting

Lord Brabourne said he believed 'in the marriage of nations,' and spoke as if proximity were marriage. In that case countries like France and Germany, whose frontiers march, should be peaceful, happy families. But what is the consequence of their proximity? Each stands armed to the teeth; and were Great Britain and France joined as proposed we would doubtless find that we would have to pay for the connection in increased armaments, and not improbably have to face the crushing necessity of compulsory military service. Sir Edward Watkin sneers at those who object to the Channel Tunnel as 'men who had crotchets,' and who must 'air their crotchets.' The names attached to the remarkable protest published in the April number of the *Nineteenth Century* are a sufficient reply to this sneer. The 'men with crotchets' include representatives of all sorts and conditions of men. Not only do we find military men of standing, but among those who have signed the protest are men whose names are familiar as household words in the domains of literature, science, and art. Financial authorities and persons engaged in the 'high commerce' are found making common cause with politicians, clergymen, and working men in objecting to the virtual abolition of the silver streak. The opinions of such 'crotchety' men will, we suspect, have greater weight with the general public than the opinions of those who are promoting the Tunnel scheme. The people of this country are not indifferent to the advantages of increased facilities for commercial intercourse, but their belief in the 'silver streak' as a safeguard against invasion is bred in the bone.

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THE DUNDEE ADVERTISER, *October* 14, 1882.

THE report of the Military Committee on the proposed Channel Tunnel, and accompanying documents, just issued as a Blue-book, more than substantiate all that has been said against allowing that work to proceed. . . . . The Duke of Cambridge raises a point that the British taxpayer will be able to appreciate. A first-class fortress, in the modern acceptation of the term, cannot be constructed for less than three millions sterling, and when constructed it will require a permanent garrison of from 8,000 to 10,000 men. The pay and maintenance of this garrison would be an absolute addition to the cost entailed upon the country for military purposes. Are the taxpayers prepared to sanction this outlay in order that a Limited Liability Company may be enabled to earn dividends? There would be no question as to the liability of the taxpayer. The Duke of Cambridge thinks the only positive security against the danger of the tunnel would be the maintenance of a vast army, entailing probably a compulsory system of universal military service. Sir Garnet Wolseley's views are already well known. The report of the Committee, he says, has served to strengthen his conviction that the hour when the tunnel was sanctioned would be for England a most disastrous one. No greater proof, he maintains, could be had as to the danger than the magnitude and elaborate nature of the precautions recommended by the Committee. Sir Garnet Wolseley's memorandum enters minutely into the whole question. Exception may be taken to the rhetorical character of the document, but it will not be an easy task to break down the arguments. Sir Garnet pertinently reminds us that 'it is not the nation which has demanded this great change in our position; it is not the nation which has asked to become a part of the Continent, and to cease to be "a sea-girt isle."' He insists that neither fortifications nor scientific agencies could be trusted as a means of preventing the English mouth of the tunnel being surreptitiously seized. It would be impossible to keep secret

any military arrangements connected with mines, and as time went on the precautions would be neglected and the machinery get out of order. There was also the constant risk of failure at the critical moment. It will in fact be, if made, and supposing the fortifications at our end of the tunnel 'to be seized by surprise or treachery, more indestructible than any other possible form of roadway, and the possession of it by a Continental enemy for twenty-four hours would place this country completely at his mercy.' These are some of the considerations urged by our ablest General against any and every proposal to weaken the splendid means of defence the country possesses in the 'streak of silver sea.' But apart from the opinions of Sir Garnet Wolseley and the Commander-in-Chief, the report by the Committee is quite sufficient to condemn the proposal. No Government, we should imagine, will venture to sanction a scheme involving such elaborate precautions. It is one thing for private individuals to combine to sink their money under the sea. But when their action necessitates the imposing of a heavy burden upon the nation, good cause must be shown why it should be undertaken. The report is inimical to the two schemes at present seeking Parliamentary sanction. The Companies could, of course, alter their plans to meet the requirements of the Committee, but is the nation ever likely to give its consent to a scheme one essential condition of which is the construction at enormous cost of a first-class fortress and a heavy annual outlay to support its garrison? This is rather an onerous burden for the country to undertake in order that a few capitalists may employ their money to advantage, and a certain number of travellers escape the horrors of sea-sickness when crossing the Channel.

THE NORTH BRITISH DAILY MAIL, *April* 10, 1882.

THE promoters of the Channel Tunnel scheme, or schemes rather, with Sir Edward Watkin at their head, are no doubt wise in continuing to express sanguine hopes of success. The one merit which may be allowed them without grudging is that of boldness. But this is not the most desirable thing when regarded from the higher standpoint of the national interests, and no one pretends that the enterprise has not the closest possible connection with these interests. Sir Edward Watkin, at the meeting of his company last week, expressed his approval of the attitude of the Government towards it. If he is satisfied it is well, for the action taken by the Government in ordering the works to be stopped until the Military Commission has reported—and, as we also trust, until there has been full time for Parliament and the country to be consulted—is satisfactory at the same time to all who are opposed to the scheme of a submarine tunnel. . . . . Public opinion needs to be educated perhaps on this question, but the process will not necessarily tend to change its prevailing drift, and that is against tampering with the natural bulwark which 'the silver streak' has so long been to the country. The thought of national insecurity is not to be laughed out of existence. It is well-founded, and it has far more solid weight in it than any of the pleas advanced on the other side. The Paris press deprecates, and in some instances ridicules, the opposition to the tunnel scheme. People on this side of the Channel, however, must be allowed to be the best judges of what is involved in the sacrifice of that insular position which France would have given much to possess more than once in its history. No one except a shareholder in the tunnel scheme will fail to see on reflection that the very lessening of the consciousness of comparative security would be a heavy, and at the same time inevitable, price to be paid for the speedier transit of goods and the

protection of passengers from sea-sickness. The improvement of the French ports and the consequent improvement of the Channel steamers would accomplish the same results almost as effectually. And even were it otherwise, what proportion do the present inconveniences bear to the increased burden which it is perfectly certain would be brought about by the existence of the Channel Tunnel in the increase of military expenditure? Let anyone think of the greater accessibility to panic in times of Continental war or rumours of war, of the importance now attributed to the navy as our first line of defence, and the sums willingly spent upon it as compared with the army, and of the tendency already shown by our military advisers to raise the army, even by conscription, if the country would listen to that idea, to nearer equality to foreign armies. Such considerations will lead few persons to sympathise with the speculative enterprise of Sir Edward Watkin and his shareholders.

THE EDINBURGH COURANT, *October* 14, 1882.

WHEN Sir E. Watkin reads for the first time the report of the War Office Committee on the Channel Tunnel he will probably regard it as decidedly favourable to the project at which he has worked with so much courage and energy. This is the superficial impression derived by many from a first perusal, but a more extended study of the evidence, memoranda, and other documents has convinced others that it is in fact fatal to the scheme. The Committee was appointed solely to consider and suggest means for securing the control of this end of the tunnel, and the feasibility of rendering it useless either permanently or temporarily. It has reported, of course, that this can be done, and has set out clearly the means and manner of doing it. But the great fact stands out through the report, and remains entirely unaffected by the complicated and costly precautions which are suggested—that the Channel Tunnel will destroy the insularity and bridge over the silver streak. It appears that a memorandum has been drawn up by the Intelligence Department, showing what wars have been made without the smallest notice, and what has happened consequently to the party which was taken by surprise. If the War Office could be prevailed on to publish this, I am told it would add irresistible force to this argument. Meanwhile independent public opinion appears to be much struck with one economical objection which is put by the Duke of Cambridge with great force. It is admitted that the entrance to the tunnel and all the means for destroying it must be surmounted by a fortified camp, so as to be protected against a *coup-de-main*, and the Duke shows that this means an initial expenditure of at least three millions, and a permanent addition of 10,000 men to the British army.

THE YORK HERALD, *October* 14, 1882.

THE Channel Tunnel will not be made, and it ought not to be made. That is the conclusion to which most Englishmen will come after carefully perusing the Parliamentary papers on the subject which have just been published. For a long time the public mind was simply moved by questions connected with the feasibility of the scheme. Whether it could be constructed, and whether it would be worth spending the large amount of money it would certainly cost, were topics of warm debate. Recent experimental borings have gone far to show that a tunnel is within the range of practical achievement. The grey chalk under the sea is solid, impermeable, and without breaks or faults. The work might occupy many years, and cost some millions of money, but it could be

accomplished. The second question, as to commercial expediency, has almost dropped out of sight. Any interest it formerly had has been obscured by the superimposition of another and more vital problem—the national danger of having any tunnel at all. Here, again, there has been a marked change in public feeling. At first some of us were disposed to deal lightly and scornfully with the fears of invasion and insecurity expressed by military and engineering critics. Our general pacific relations with the Continental Powers, our unambitious *rôle* in Continental politics, and our ability to keep effectual guard over the Dover end of the tunnel, seemed to be self-evident and irrefragable propositions. But the more the matter was discussed, and the more we examined the schemes for preventing seizure and ensuring temporary or permanent closure, the less we were inclined to persist in our earlier attitude. Certainty gave place to doubt, and an entirely new group of objections made their appearance, some of which had a potency that was difficult to resist. Two Bills were prepared for Parliamentary sanction, borings went on, and the Government was importuned to come to the rescue. Before any scheme could be intelligently discussed, it was imperative to obtain the opinions of engineering and military experts, and hence the Government appointed a Committee, whose report is now published, and is fatal to either of the schemes submitted to Parliament. We venture to think that it will be fatal to any scheme whatever, now that we have, in addition, the careful and exhaustive judgments of Sir Garnet Wolseley and the Duke of Cambridge, and we can compare them with the opinions of Sir John Adye and Sir Andrew Clarke, on the other side.

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THE WESTERN DAILY PRESS, *October* 14, 1882.

THE Channel Tunnel scheme has been to some extent discredited by the mode which has been adopted for its advocacy. If it is ever to be constructed it must commend itself to the calmest convictions of the country. With most people the first consideration is that it would to some extent alter our relations with the Continent. We are protected at present, it is argued, by the silver streak—why should we abandon a defence which helped us to meet the Armada, and which defied Napoleon when he was overturning the Continental thrones? The objectors do not consider they have been answered when they are told that a dozen ways might be devised for rendering the tunnel useless for military purposes. The protection of the tunnel, they say, would entail a permanent charge, and would in troublous times be a source of anxiety. The Blue-book just issued will strengthen the opinion of those who oppose the making of the tunnel. The experts are nearly all against it. The committee say they cannot disregard the possibility that a long period of peace and uninterrupted tranquillity might engender carelessness, and might lead to fortifications being so inefficiently armed or insufficiently manned as not to be secure against surprise. They consider that it would be presumptuous to place absolute reliance upon even the most comprehensive arrangements with a view of rendering the tunnel 'absolutely useless to an enemy in every imaginable contingency.' Sir Garnet Wolseley says the hour when the tunnel is sanctioned will be a disastrous one for England. The Duke of Cambridge earnestly begs Her Majesty's Ministers to pause ere they accept for the nation a new element of danger that would threaten our very national existence. These views will no doubt have a great influence on public opinion, and it is not improbable that the assumption of the *Times* that we have heard the last of the tunnel as a practical question for some time to come will be realised.

THE LEEDS MERCURY, *April* 8, 1882.

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WHETHER the Channel Tunnel is or is not a desirable work, everybody must admit that it is one which must have a very important bearing both upon the social and political institutions of this country. If it should be completed, it will revolutionise, not perhaps in an hour, but inevitably in the end, many of the most cherished of our English institutions. Stay-at-home people are probably unable to realise the extent to which the character of Englishmen and of their constitution is governed by the fact of their insularity. Looking at the map of Europe, it is almost impossible to realise the political and social importance of that narrow strip of water which divides the white cliffs of Dover from the sand-hills of Calais. Yet those two-and-twenty miles of grey sea have been beyond all doubt the greatest factor in determining the character of the Englishman of to-day. But for them it is probable that England would at this moment be occupying the position of another Belgium. Such a position may have its advantages, but it is at least very different in all respects from that which England actually holds. We do not, of course, say that the mere construction of a dry ditch between England and France would altogether neutralise the advantages we derive from the existence of the English Channel, but it is not unnatural that many persons should maintain that the construction of such a tunnel would be the starting-point in a movement by which not only our physical but our moral, social, and political insularity would in the end be effectually destroyed.

Sir Edward Watkin, who has a great capacity for being cheerful under difficulties, in his address on Thursday to the shareholders of the Channel Tunnel Company, made very light of all the objections which have been offered to his gigantic scheme; and Lord Brabourne, who is his very efficient henchman in the undertaking, was good enough to announce his firm conviction that the day was at hand when all those who object to the tunnel would joyfully acquiesce in its construction. These are views of the question which are natural enough on the part of gentlemen who have invested money in the undertaking, not out of any high-minded, patriotic, or philanthropic ideas, but simply in order that they may derive personal profit from it. We venture to say, however, that the English people, who are not all shareholders in this scheme, will decline to look at it purely from the point of view of the speculators who have originated it. Sir Edward Watkin was compelled to make allusion to the unpleasant fact that the military authorities of this country have found it necessary to institute a searching inquiry into the possible effects of the tunnel upon the defensive strength of England. We are not among those who are disposed to attach an exaggerated degree of importance to the military side of the question. Some of the stories which have been published in the style of the well-known 'Battle of Dorking,' as contributions to the literature of the tunnel, have been obviously based upon impossible data. The French, supposing they were even to contemplate the invasion of this country, would not be mad enough to attempt it, in the first instance, by means of the Channel Tunnel. But no one can deny that the existence of the tunnel would, in the event either of a war or of a serious political crisis between this country and France, prove a very grave disadvantage to us. That it would have a tendency to make panics more frequent and more severe cannot be doubted, and for such panics there would be a reasonable ground. For although no Power would be mad enough to attempt the invasion of this country through a tunnel, the existence of

such a tunnel would bring the invasion of England within the range of practical operations. It would create a vulnerable spot in the heart of England. The French people would know that, provided they could seize Dover, and thus obtain command of the English end of the tunnel, they would instantly find themselves in a position to retain their hold on English soil. A successful descent upon the shores of England by a hostile army has always been regarded as a possible occurrence, but the strength of the country has been in the fact that, even if such a descent were to be made, and if an enemy who had succeeded in eluding the vigilance of our fleet were to land upon our shores, it would be possible for us instantly to cut off his source of supplies, and by separating him from his base of operations, to bring him, for all practical intents and purposes, into our power. In future, however, if such a descent were to be made upon Dover, and that position were to be seized, there would no longer be the possibility of cutting the hostile army off from its supplies, and thus, at a single stroke, the value of the navy of England would be neutralised. The danger may be a remote one, but it undoubtedly exists, and we cannot, therefore, be surprised at the importance which military men attach to it, or at the disfavour with which they regard Sir Edward Watkin's speculation.

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If they (the promoters) could show that the tunnel was, from any point of view, a public necessity, we might be disposed to listen to their arguments with respect; but they are unable to prove even that it will be a public convenience. It may in the end save a few timid souls from the pangs of sea-sickness—pangs which they may easily avoid if they like by staying at home—but beyond that not a single useful purpose will be served by it. We have a right, in these circumstances, to say that even if the objections to the construction of the tunnel were infinitely smaller than they appear to be, no reason has been shown why it should be made, and we earnestly hope that when the question comes before Parliament, the position of the Legislature will be in accordance with the all but universal feeling of the country on the question.

THE LEEDS MERCURY, *October* 14, 1882.

IT is admitted by nearly everybody, except Sir Edward Watkin and his immediate satellites, that the Channel Tunnel scheme is doomed. The Government may carry out the intention which they announced last session of appointing a joint Committee of both Houses to consider the project, but whatever the Committee may report, it is almost certain that Parliament will refuse to sanction the scheme. The overwhelming weight of military opinion is against it; and the strong, able, and clearly argued memorandum of Sir Garnet Wolseley will settle the matter in the eyes of all reasonable men. It is clearly possible that an enemy might carry the Dover end of the tunnel by surprise, and that is a risk which ought not to be run except for the highest and most undoubted benefit. Curiously enough, the military party and the peace party are both agreed as to the imprudence of the Channel Tunnel. The soldiers are opposed to it, because they believe it would really add to the risks of invasion, and the peace party object to the tunnel because its existence would cause frequent panics, and would be used as a pretext for greatly increasing the armaments of the country. Those who heard the frequent questions put in regard to the Channel Tunnel last session can have no doubt of the opinion of the House of

Commons. On both sides of the House, not more on the Conservative than on the Liberal side, the drift of opinion was opposed to the project. Apart, in fact, from the French and English railway interest, it would be hard to say who is in favour of it.

THE WESTERN MORNING NEWS, *October* 14, 1882.

IT may be taken for granted that the Channel Tunnel is doomed. The report of the Scientific Committee, just issued in a Blue-book, is a fatal blow to Sir Edward Watkin's hopes. It is not improbable that the tunnel may eventually be made, but the weight of military authority against it is so great that public opinion will not permit the experiment; at any rate, during the present generation.

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THE OBSERVER, *October* 15, 1882.

THE Blue-book of correspondence relating to the proposed construction of the Channel Tunnel contains matter enough, we should think, to shake the confidence of even the warmest advocates of the scheme. Foremost among the documents which it contains is the report of the scientific Committee appointed in February last by the War Office to consider the collateral question of the practicability of closing a Channel Tunnel against an enemy; but the strict limitation imposed upon the inquiries of this body detracts little, if at all, from the weight of their conclusions. The question into which they had to examine is, of course, but one of many which this project raises; and the unsatisfactory answer which the Committee are compelled to give to it, is only one illustration of the many difficulties which confront us in the matter. We have merely to consider the number and complexity of the arrangements which Sir Archibald Alison and his colleagues have declared essential to the protection of the tunnel, and then to note the doubtful and hesitating language in which they describe the probable result of all these precautions, in order to feel how perilous an uncertainty encompasses the whole project. The contrast, in fact, between the elaboration of the measures which the Committee recommend, and the impotence of their conclusion, recalls the attempt of the negro field preacher to explain infinity to his coloured congregation. They were, he told them, to imagine a piece of string wound round the earth as many times as there are stars in the sky, and then as many more times as there are grains of sand on the seashore, and having done so, they would not, he said, have assisted themselves in the slightest degree to form the conception required. In the same way the Committee inform us that in order to make the tunnel safe we must have the power of closing it by a portcullis, of discharging irrespirable gases into it, of provisionally demolishing its land portion, of temporarily flooding it by sluices, and of permanently flooding it by mines; and then it will not be safe. But, after all these precautions have been taken, 'it would be presumptuous,' the Committee hold, 'to place absolute reliance upon even the most comprehensive and complete arrangements which can be devised with a view of rendering the tunnel absolutely useless to an enemy in every imaginable contingency.' It is true that Sir John Adye not only approves of the recommendations of the

Committee as sound and practical, but holds that they might be safely relied on as adequate, under all possible circumstances, to the protection of the tunnel. They are, he argues, not only various, but independent of each other, and many of them could be improvised or multiplied at the last moment. In short, Sir John Adye is of opinion that 'nothing is more obvious than the facility with which the tunnel can be denied to an enemy by means which no vigilance on his part could prevent or remove.' It will scarcely be thought, however, that this confident pronouncement of one authority, however high, should weigh against the doubts of a whole body of eminent experts, military and civil, as to the absolute efficacy of precautions which they themselves have suggested.

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After all, too, the one great argument against it, the argument which no amount of ingenuity can dispose of, is this: that commercial advantage and national safety are what mathematicians would call incommensurable quantities; the one cannot be expressed in terms of the other. It is impossible to say, without absurdity, that a considerable increase of our Continental trade might fairly be set against a trifling diminution of our security against invasion. The largest addition to our national wealth would not be worth purchasing at the smallest risk to the nation by which that wealth is enjoyed. It is incumbent upon the advocates for the tunnel, therefore, to show not merely that it may be made as nearly as possible safe against employment by an invader, they must show that it can be made perfectly safe. And this they are altogether unable to do. They are not even able to prove conclusively the less difficult proposition that the tunnel could be secured against employment for the actual purposes of invasion; while that it could ever be prevented from affording the most fatal facilities of communication and reinforcement to any invader who should already have established himself on our shores without this aid, they have scarcely attempted to prove at all. It is clear, however, that the mere failure to establish this point must be deservedly fatal to the Channel Tunnel scheme. An invasion of England would, of course, be no easy task for even the most powerful enemy whom we could have to encounter; but it is not too much to say that the difficulty of invasion would be a trifle compared with the difficulty of maintaining the supplies and communications of a large army after it had once obtained a foothold upon our shores. The saying attributed to the great German strategist that 'he could imagine a dozen ways of invading England, but of not a single way of getting out of it again,' is only another way of stating the problem of communication and supply. How to keep open a road from the invader's base beyond the seas to a seat of war in this island is a question which no military expert has as yet been able to answer; and it is no inconsiderable element in our insular security that the question remains unanswerable. Let it be remembered, too, that the construction of the tunnel does not merely supply an answer to this question; it supplies the simplest of all possible answers. In place of a marine line of communication, which it is almost impossible for an invader to defend, the tunnel would substitute not a land line, which though it may be defended may also be effectively attacked, but a submarine line, which it would be next to impossible for the invaded nation to attack at all. We should be changing conditions most favourable to ourselves, not simply for conditions so equalised as between ourselves and a possible enemy, but to conditions actually most favourable to our foe. No possible prospect of commercial advantage could compensate for this.

LLOYD'S WEEKLY NEWSPAPER, *February* 26, 1882.

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THERE are very momentous questions involved in the Channel Tunnel project. The history of the Suez Canal suggests many, but not all of them. One or two have been touched upon in the *Law Journal*:—

'It is clear,' says this Journal, 'that the tunnel might be run from the French coast to the line at which British jurisdiction begins before any difficulty of international law would arise. From the point of view of international law, it would be the last step only which would cost—namely, the rise to the surface of the tunnel under the foreshore and in British *terra firma*. If, however, the French company could buy their footing, there is no reason why they should not hold it, as by the Naturalisation Act, 1870, the disability of aliens to hold land is abolished. It thus seems that we may have France coming across to us under the sea, and actually touching British soil at Dover.'

The importance of the foregoing considerations will strike men of sober mind who have disdained to enter upon the discussion of the military scare. The constitution of the association that is to construct the tunnel; the international arrangements that are to govern it, and effectually to protect it in time of war; the manner in which it is to be worked; these are legitimate and rational subjects of controversy. Their gravity is beyond question. The mere mention of them will satisfy the public that the Government have adopted a wise course in proceeding with caution, and in deferring their determination in regard to the Bill before Parliament until they have exhausted their inquiry into all the advantages and disadvantages of an Anglo-French submarine tunnel.

The advantages, beyond that of freeing travellers from the risks of sea-sickness, are not striking. The journey to and from Paris would not be made cheaper by a Tunnel Company, who would be compelled to charge high fares to give even a small dividend to their formidable body of capitalists. Little, if any time, would be saved. A hitch in the tunnel would suspend the traffic between the two countries until it was overcome; for the Channel steamers would have disappeared. The collapse of the tunnel, or the flooding of it, would bring about incalculable troubles in our directest intercourse with the Continent. Against these fearful odds, what have Sir Edward Watkin and his friends to show, save the glory of an engineering achievement, worthy of any man's ambition? Sir Edward would add a new wonder to our world of wonders; but the public are not satisfied that his achievement would be any solid gain to England, and, as practical men, they perceive a peck of troubles lying under it.

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In short, it is a fine idea, Sir Edward; but political men, diplomatists, military men, and the public generally are against you!

THE SUNDAY TIMES, *April* 16, 1882.

WE know of nothing more irritating to the nervous system than the persistent gnawing of a mouse behind the wainscot. Everyone has experienced the brain-torture inflicted by the annoying proceedings of this sleep-destroying domestic rodent. Something akin to the nervous

disturbance thus caused have been the sensations we have for some time experienced—attributable to the boring operations of Sir E. Watkin under the foreshore of our island. We do not for a moment mean to compare the workmanship of this enterprising gentleman with the nibbling of the puny quadruped above alluded to, or to insinuate that the chief promoter of the Channel Tunnel is of similar Lilliputian dimensions in any respect. We, on the contrary, attribute to him the leonine energy, strength, and courage of which the British race furnish so many admirable examples. When, added to these qualities we see so fully developed in him, a perseverance rivalling that of M. de Lesseps, our apprehensions that he would ultimately carry through his project of connecting Great Britain with the Continent by a submarine railway were rapidly growing into a conviction that expostulations would be useless, and that any feeble resistance we could interpose would be swept away, much as a gate crossing one of Sir E. Watkin's railways is sometimes shivered into a thousand atoms by an express train. We had arrived at the condition of alarm which impels travellers in the East, on seeing the approach of a sirocco or whirlwind, to prostrate themselves on their faces and let the storm sweep over them in its irresistible potency. Sir E. Watkin, in his address to the members of the Submarine Continental Railway Company, claims for himself the attributes of a 'strong man,' and we do not presume to contest the fact. He is ready 'to hand over his position as leader' to a Samson stronger than he, 'provided that stronger man appears.' We did not indeed hear, except mentally, the grinding of Sir E. Watkin's rock-boring machines, but nevertheless, the consciousness that he was working day and night to put an end to that insular position which has in past times more than once proved our sheet anchor of safety, had precisely the same disquieting effect upon us as the operations of the mouse; and we confess to experiencing a feeling of relief on hearing of the interdiction of his progress. Now, strange to say, one of the arguments prominently urged by Sir E. Watkin in recommendation of his scheme is that it will promote a religious 'rapprochement' between the English and Continental peoples! He quotes M. Thome de Gamond, a French engineer, and also, we presume, a competent religious authority—who says, 'a manifest sign of the religious spirit of the times is the general propensity of nations to throw down the natural or artificial ramparts behind which they have so long entrenched their antagonism.' Now, we entertain very considerable doubts as to this universal religious spirit on the Continent. We believe, on the contrary, that an irreligious spirit is very much in the ascendant in France, Germany, Italy, and even Spain; and this argument, therefore, falls to the ground. Mr. Cobden's favourable opinion is quoted, as also with, we think, questionable propriety, some manifestly not maturely considered expressions of Her Majesty and the late Prince Consort at an interview with M. de Gamond in 1857. As Lord Beaconsfield would say were he now here, 'much has happened in the interval' which would very materially modify opinions expressed at that epoch. From the discussion of the project from financial and military points of view, which has been carried on in the press, the public are now tolerably well informed upon these phases of the question; there are two matters, however, which appear to have been overlooked—the facility the opening of such a means of communication would give to smuggling of small articles of great value, and the inconvenience to which the searching of these persons and luggage must subject travellers. But by far the most serious objection is the facility that would be given for Continental communication between the revolutionary societies which exist in every Continental state—especially in France, and cognate associations in this kingdom. Such, happily, do not now exist; the silver streak is a greater bar to the move-

ments of Nihilists, Internationalists and Bradlaughites than is generally believed, but with several trains a day between Paris and London, we should have an amount of fraternising between the discontented denizens of the great cities of both countries, which would yield very unsatisfactory results on this side of the Channel. We sincerely hope that Sir E. Watkin's project will shortly receive its final *coup de grace*. No doubt he will not yield without a resolute struggle.

THE SPECTATOR, *February* 4, 1882.

IT is time the public should make up its mind about the project for a tunnel across the Channel. The recent speech of Sir Edward Watkin shows that the proposal has become serious, that it has attracted at least two groups of capitalists, and that if neither England nor France interfere as Governments, the attempt to turn England into an outlying peninsula of the European Continent will be seriously made.

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There is, therefore, a fair prospect that the attempt to build the tunnel will be made, and we are rejoiced to hear that a Committee, representing the War Office, the Admiralty, and the Board of Trade, are considering its propriety from a national point of view. They are to report, we presume, technically, upon the expediency of granting certain powers to a Railway Company; but we trust they will go much further, and urge upon Parliament the duty of an absolute and peremptory prohibition of any such undertaking. Sir E. Watkin seems to think this beyond the rights of Parliament, but that is an ill-considered opinion. The Channel may be outside municipal jurisdiction, but Parliament has a clear right to declare what is or is not hostile to the safety of the nation, and to hang Sir Edward Watkin, or any other British subject, if after explicit notice he endangers it; and in that supreme right all other rights are involved. We have long been satisfied, as we stated years ago, that the tunnel, if completed, would be almost purely mischievous, as slowly destroying the insularity and separateness of the national character, and we are now convinced that it would involve at least two dangers of the most concrete and unendurable kind.

The first of these is the danger of actual invasion. The tunnel, if it is to be of any use at all, must be solidly constructed and well ventilated, and would form a road through which a small body of troops—2,000 would do—could be carried in one hour to seize the English end, and hold it until a *corps d'armée* had within twelve hours more arrived with reinforcements. It must, moreover, unless strongly fortified and placed under complete military control, be liable to a *coup de main* by sea, modern science enabling any ruler of France, if sufficiently unscrupulous, to send against Dover an ironclad fleet and ten thousand picked troops in thirty hours, without any sufficient warning whatever. They might be sacrificed, but the loss would not injure the national strength or alter the conditions of the war already determined on, while their success would mean a speedy and a complete victory. To say that no Government which could exist in a civilised State would do such a thing, is to deny all the teaching of history. We are, of all peoples in the world, the least likely to make a gigantic raid upon a civilised capital, without a declaration of war, merely to avert a future danger; and we did it, and that not against a 'natural enemy,' but a Power with which we had never exchanged shots for a thousand years. It was Pitt who ordered and Nelson who carried out the bombardment of Copenhagen, in a time of peace,

solely to avert the surrender of the Danish Fleet to Napoleon; and why should we expect French Ministers and Generals to be more scrupulous than such men? The French also might produce the argument of national necessity. Indeed, why should we hope them to be scrupulous? Suppose M. Gambetta to have resolved on the immense wickedness of an invasion of England for purposes of conquest, and the inconceivable misery and world-wide ruin involved in that operation, why should he hesitate at the pettier crime of treacherously seizing in advance the most important Pass, the possession of which might save so many French lives? It has been done a hundred times in war when a mountain chain was in question, and the sea has no especial sacredness. Our single defence in such a case would be the power of blowing-up the tunnel suddenly and unexpectedly, and what would that power be worth? A chance, merely. The Premier might think himself justified in destroying twenty millions of property, and impairing twenty-two millions more—for the whole capital of the South-Eastern Railway would be paralysed—and stopping enormous trades, all on the strength of evidence which he probably could not produce—that happened in the Copenhagen case—which his rivals would pronounce imaginary, and which the people would only half believe; but also, he might not. He might be an undecided man, or a man expecting defeat by the Opposition, or a man paralysed by the knowledge that the tunnel was full of innocent people whom his order would condemn to instant death, in a form which is at once most painful and most appalling to the imagination. They would all be drowned in darkness. The responsibility would be overwhelming for an individual, and a Cabinet, if dispersed, takes hours to bring together. No system of shutting up the tunnel, be it remembered, would do, if the English end were in danger of a *coup de main*. The French engineers, once in possession, would soon remove all artificial obstacles, even if they could be made sufficient for the time. The tunnel must be blown up, and the people in it. Consider, too, the danger of treachery, of the rush on the tunnel being made by Irish Republicans in league with the French, while the wires of the telegraph were cut, and all swift communications between Dover and London suddenly suspended. We believe firmly in English bravery when fairly called upon, but we do not believe in British information, or in British promptitude to destroy property, or sweep away what will be described as one of the Wonders of the World. Nobody would be to blame, but we should be all unready when the Pass was seized.

Grant, however, that our fears (of actual invasion) are exaggerated, though they are shared by competent naval and military authorities, and then we are in presence of the second, and perhaps even greater danger,—recurrent panic. The English people will not adopt the conscription, even for defence against invasion—we mean, of course, a real conscription, with its accompaniments of sufficient officers, sufficient carriage, efficient commissariat, and the penalty of death for evasion—until they are in presence of some imminent danger; and until they have a conscription, they must rely for their main defence upon the Channel, for no other can give them time. With time, if it is only six weeks, they could bring together a very powerful army of drilled men of all kinds, who would render the position of any force that could be conveyed suddenly by sea speedily untenable; but with the Channel crossed by a causeway not in their hands at the other end, they could never be secure. There would always remain the chance of an occupation of London, which, if it only lasted twelve hours, would destroy all credit, make all firms bankrupt, and leave traces of its pauperising effects for half a century, besides compelling us to devote one-tenth of all the strength of each successive generation to military purposes. The English people, without reasoning, feels the magnitude of that danger, and is con-

sequently, of all peoples the one most liable to panic. It would never be sincerely at peace with France, never cease to suspect her, never tolerate her active movements; and every ten years the ill-feeling would rise to fever-heat, and we should either have war, or a panic about war nearly as disastrous. A panic of that kind arrests trade for years. Every Premier who rose in Paris would be an object of incessant attention, and if he displayed the smallest tendency to Chauvinism, would be regarded as a potential foe, and hated as Napoleon was. We see how it is when the stake is only Cairo, and may judge what it would be when the stake was national existence or the safety of London. So serious do we believe this danger to be, that we expect the more far-sighted among French statesmen ere long to perceive that from the day the tunnel is opened, the interests and the desire of England will be to see France reduced to a third-rate Power, existing mainly as a barrier between England and Germany, and as not less unable to project a conquest of Great Britain than Holland or Sweden is. France, in sanctioning such a project, raises up for herself a permanent and very dangerous enemy; while England risks either invasion or immediate and pressing necessity for a conscription on the Continental plan. And all these risks are to be incurred in order that a few persons shall avoid a few minutes' sea-sickness two or three times in their lives, that Sir Edward Watkin shall have a grand reputation, and that a few capitalists shall have another mass of stock to manipulate at discretion. We do not believe that even in this age, with its mania for rapid riding and comfortable locomotion, such a project will be tolerated, either by Parliament or the Assembly, for an hour.

THE SPECTATOR, *October* 21, 1882.

THE Blue-book on the Channel Tunnel ought to dispose of the scheme until the Millennium. When wars have become matter of history, and nations have no longer any motive for attacking their neighbours, those who wish to enjoy a twenty miles' journey in an atmosphere resembling that of the Metropolitan Railway will, perhaps, have the opportunity of doing so. There will no longer be any War Office to whisper dissatisfaction, or any Commander-in-Chief to protest on military grounds. But until this happy time arrives, the promoters of a Channel Tunnel must submit to have their project condemned on its merits. It cannot hope to endure the criticism of Sir Garnet Wolseley, or the very weighty Memorandum by the Duke of Cambridge. In the latter, especially, there are some points which are either new, or stated with a force which makes them as good as new. For example, the Duke especially urges upon the attention of Ministers 'the peculiar geographical position of Calais.' It is a mistake to treat the tunnel as dangerous only in the event of a rupture with France. 'Calais lies in so isolated a position, on the extreme north of the French coast-line, and the boundary between France and Belgium falls away so rapidly to the south from near Calais, that Antwerp and Brussels are both much nearer to Calais than Paris is. Any Power, therefore, which, when at war with France, had taken possession of Belgium, would find it possible to seize Calais, and might find it convenient to punish an alliance of ours with France by a sudden seizure of Dover.' As regards the power of the military authorities to destroy the tunnel at a moment's notice, the Duke asks the Government to consider 'whether the time when there was a prospect of war, and when our relations with a foreign Government had reached a strained condition, would be that precise moment which an English Cabinet would

choose for ordering even the temporary stoppage of the tunnel, an act which would be taken by the inhabitants of both countries as a sure indication of coming war.' Yet it would be in this interval that the greatest danger of the tunnel being suddenly seized would arise. 'Unless, therefore,' the Duke goes on, 'it is quite certain that no foreign Government that had written angry despatches on the subject of alleged grievances will ever suddenly and seriously make up its mind that, war being inevitable, it is better to anticipate diplomatic forms, and by means of treachery or surprise obtain possession of so all-important a prize as the fortress on which the whole security of England would then depend, it is idle to trust to protection which only guarantees our safety when ample warning is given.' In support of this view, the Duke refers to an unpublished paper, giving a list of wars commenced without previous declaration, which, as he maintains, 'shows conclusively that wars have commenced much more frequently during the course of diplomatic correspondence than after all diplomatic relations have been broken off; that again and again fortresses have been seized unprepared and without resistance, because their defenders were not aware that they had any reason to expect attack.'

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The arrangements proposed to secure the partial or complete destruction of the tunnel are in the highest degree complicated. At the mouth of the tunnel, a portcullis is to be placed, by the act of closing which one or more lengths of rail will be removed, and a trap-bridge raised. To guard against the mouth of the tunnel being surprised before the portcullis can be closed, means must be provided for stopping ventilation by closing the air-shafts, for discharging irrespirable gases into the interior, and for rapidly delivering shingle through channels specially provided for the purpose. All these obstructions could easily be removed, and the tunnel put again into working order in a short time. To provide for the temporary demolition of the tunnel, mine galleries would have to be carried either alongside, above, or below the tunnel, in which charges sufficient to destroy for a considerable distance the walls, roof, or floor might be permanently kept. As a preliminary to the firing of these mines, a large, unconfined charge of explosives might be kept ready at hand, on a truck, to be started at any moment down the line, with a time fuse attached to it. As an alternative to this expedient, explosive charges may be lowered into the air shafts, and for this purpose electric cables should be kept ready laid to the upper openings of the shafts. The temporary flooding of the tunnel is to be provided for by sluice-valves, the means of opening and closing which are to be placed within the fortress. The destruction of the tunnel would be effected by the simultaneous discharge of mines constructed between the bed of the sea and the roof of the tunnel, 'so that their explosion should make a breach into both, and thus admit the sea.' All these mines should be controlled, not only from the central fort, and from any outworks the Commander might think proper to place in communication with them, but from one or more distant places. In this way, the power of permanently destroying the tunnel might be retained, even after the protecting fortress had fallen.

Yet when all these multiplied precautions had been taken, what would be their real value? On the principle of the strength of the chain being judged by its weakest link, just nothing at all. Colonel Webber, who was for many years in charge of all the telegraph wires of the Post Office throughout the South of England, says:—'It would be a wiser act for a General to leave the success of a battle dependent on a telegraph wire, than for the nation to trust to a conductor between London and Dover for the destruction of a tunnel at a supreme moment.' Not

only can no wire that is not constantly tested be depended on for acting at a given moment, but after years of good maintenance a wire might be tested at noon, and in the afternoon it might be found, on the need for using it suddenly arising, that an ordinary electrical fault arising from one of a hundred causes had occurred in the interval, and had rendered the labour of years useless. This might happen when all the arrangements were in perfect order, but then we have Sir Garnet Wolseley's testimony, founded on his knowledge of our military stations all over the world, that in time of peace our arrangements never are in perfect order. His experience supplies no guarantee 'that all your electrical apparatus will be in perfect order, or that your sluice-gates will be in perfect order, or that contrivances which have been designed before-hand for rendering this tunnel useless will have any effect, when you want them.' These are only a part of the objections to any project for tunnelling the Channel, but it seems scarcely possible that it can be necessary to bring forward any more.

THE SATURDAY REVIEW, *April* 1, 1882.

THE *Nineteenth Century* for the present month contains what is probably a novelty in the history of magazines and reviews—a formal protest against the Channel Tunnel, drawn up in concise language, to the effect that the undersigned have had their attention drawn to certain proposals of commercial Companies to join England to the Continent by a railroad; that they are convinced that, precautions notwithstanding, such a railroad means additional danger; and that they therefore protest against it. The sixty names which follow are merely intended as a first instalment, and they are certainly a remarkable list. Ornamental signatures, as they are called, are conspicuously absent; and though there is little doubt that the names of a very large number of peers and other titled persons might have been obtained at once had the intention been merely to impress the vulgar, the proportion of such names is rather small than otherwise. The prominence of one political complexion is equally absent. It is the contention of the advocates of the Channel Tunnel—a contention which is almost the only attempt at argument which they have made—that their opponents are a pack of reactionaries and obscurantists, who are frightened at what is new, cling desperately to a policy of isolation and seclusion, and are, in fact, half stupid and half timid old women. Among this small sample of the ignorant and stupid reactionaries and obscurantists figure Sir John Lubbock, Mr. Burt (a Tory aristocrat to the backbone), Mr. George Howard (the sworn foe of culture, cosmopolitanism, and the Continent), Professor Huxley, Mr. Herbert Spencer, Mr. Goldwin Smith (all orthodox old women), Mr. George Holyoake (a fanatical believer in all institutions that exist), and other names of the same kind. Another argument of the Tunnelites is that military and naval men laugh at the notion of there being danger in a tunnel. As Mr. Knowles reminds us, official etiquette forbids the Duke of Cambridge, Sir Garnet Wolseley, and Sir Astley Cooper Key, the chief professional member of the Admiralty, from asserting their known opinions. But not to mention Lord Dunsany, Sir John Hay, Sir Lintorn Simmons (an authority on engineering perhaps equal to Colonel Beaumont), General Hamley, Sir Henry Havelock Allan, Admiral Hornby, and others appear here as representing the two services. Such names as those of Mr. Tennyson, Mr. Browning, Cardinal Manning, Sir James Paget, and others, need less mention, because they may be thought not of themselves to traverse any contention of the promoters of this mischievous project, as do those just

mentioned. But they are emphatically representative names, representative of the brains, if not of the political or professional *expertise*, of the country. Indeed it would not be easy to get another list of fifty or sixty names together, even if the entire population were sifted, more significant than this.

It may be thought that, in face of the hopeless argumentative defeat and prostration of the advocates of the Tunnel, such a measure as this is unnecessary. For it is not a case here of *Quis vituperavit?* but of *Quis defendit?* Despite the great material interests involved, and the eager and (if report may be credited) far from scrupulous efforts made by the promoters to further the scheme, not one single literary champion, not merely of eminence, but of any value whatever, has been secured for the Tunnel. Its advocates have been reduced to abuse, to insinuations of interested motives—which, considering the circumstances of the case, are supremely ludicrous—to fantastic shifts like that of Colonel Beaumont as to the suspicions of the booking clerks. But it must be remembered that private Bills are not got through Parliament, or turned out of Parliament, by argument. They are got through by persistent effort, by adroit and unscrupulous lobbying, by hole and corner processes of every conceivable kind. Indeed it is scarcely cynical to say that almost the only protection which public interests have against private in these cases is that private interests generally conflict—that Greek meets Greek. There is something of this in the present case; but it is by no means certain that there is enough of it to confer security. Hitherto, perhaps owing to official etiquette, perhaps owing to other causes, leading politicians on both sides have been very loth to express any opinion on the matter. Sir Richard Cross, whose name, very much to his credit, figures here (thereby sufficiently disproving the allegation that the late Government gave anything more than the usual diplomatic assent to a project yet in the air), is the first, or almost the first, to give any sign. The inquiries which have been going on have been closed to the public, have been for the most part of a departmental character only, and have not, to speak openly, been of a character either very fully to represent, or very frankly to satisfy, public opinion. Irregular methods of procedure, and the appeal as far as may decently be *ad populum*, are therefore the only methods left to be used against the vast powers of direct and indirect persuasion which acute commercial projectors know how to bring to bear in favour of their projects.

There are, it is believed, some people who, not having taken the trouble to follow the very full discussions of the details of the subject which have been given in the daily newspapers and the monthly reviews, are unable to appreciate the objections to the Tunnel. What can be more disadvantageous, they ask, for military operations than a twenty miles' boring under the sea? The answer is 'For opposed military operations, nothing.' It may be observed that, even if the best be made of the Tunnel, two of its bad consequences—increased military expenditure and constant panics—are unavoidable. The first is admitted; the second has been demonstrated beyond the possibility of refutation. But the actual danger of the Tunnel being forced in open and honourable warfare, and in spite of opposition, is, it may be said, non-existent. Let it be granted. The opponents of the Tunnel have never said that it was great, or even that it was anything but insignificant. But they have said that against, in the first place, a treacherous surprise in time of peace; in the second, a successful *coup-de-main* in time of war, no precautions that can be taken can ever be wholly and certainly sufficient. The mechanical means of destroying the Tunnel may be easy to devise; the possibility of enveloping its shore end in such a *feu d'enfer* that nothing could come out of it alive, may be perfect. But nothing will ever certainly

guard against, first, surreptitious seizure by disguised passengers; secondly, surreptitious seizure of the shore end in the same way from the land or seaward; thirdly, the capture of Dover by a *coup-de-main*; fourthly, the failure of the means used to destroy the Tunnel; fifthly, irresolution, misjudgment, and laches of one kind or another on the part of the persons charged with applying those means. Lastly, and above all this, the enormous additional significance which the Tunnel would give to that invasion of England by ordinary means, which no expert regards as impossible, by its support to the invader in the process of conquest, and still greater support in securing his conquest when it was made, has to be taken into account. Against all this the opponents of the Tunnel have patiently, and in vain, asked for something to set besides immunity from sea-sickness and the possibility of talking rhetorical nonsense about the brotherhood of the peoples (as per sample on the Continent at the present moment). When a branch line ten miles long is started from Little Pedlington to Great Muffborough, we have laid before us the most elaborate calculations of the amount of traffic which may be expected, the particular industries which will be benefited, the estimated profits, &c. Here we have absolutely nothing of the kind. That English workmen do not see their account in the scheme appears from the presence in this short list, not merely of Mr. Burt, but of Mr. George Howell. That the solid moneyed interest is not enthusiastic on the subject is testified by the presence there of Sir John Lubbock, and of the Governor of the Bank of England. These significant protests are not matched by any corresponding advocacy. Nothing has been heard of any enthusiasm for a Channel Tunnel in the great seats of industry and commerce, or in the producing or in the manufacturing districts. Except the persons immediately and pecuniarily interested, it is impossible to find any one who will give it a good word; and against those who give it a bad word it is impossible to discover the least suspicion of pecuniary interest on the other side. The impudent imputation of stupidity and hatred of progress has been sufficiently refuted, if, indeed, it needed refuting, by this long list of the *Nineteenth Century*. But it is very much to be hoped that all men of eminence, no matter of what variety their eminence may be, will strengthen Mr. Knowles's contingent.

THE SATURDAY REVIEW, *October* 21, 1882.

IT is not often that the general public can be advised to buy and read a Blue-book, particularly a Blue-book of considerable size. But the correspondence in reference to the proposed construction of a Channel Tunnel which was issued at the end of last week may almost be described as indispensable in an Englishman's library. It contains, indeed, no argument on the subject of the mischievous project it discusses which has not been repeatedly urged before, and not least in these columns. But it contains those arguments set forth in an official form, urged by names of the highest personal authority, supported by facts and considerations of great interest and some intricacy, and strengthened by the very attempts to overthrow or minimise them which the book also faithfully reproduces. It is, indeed, difficult to believe that the design of a Tunnel can survive the publication of this volume.

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If the Channel Tunnel were a great national benefit, it is not its cost, direct or indirect, that need stand in its way. But it is demonstrably certain that it would be a great national curse. The admission of

the Committee that their most elaborate recommendations can only provide a dubious and problematical security almost does away with the necessity of considering those recommendations themselves. The safety of England is the first consideration, and no advantage attended by conditions which impair that safety can be considered as other than dust in the balance. How gravely it would be impaired Sir Garnet Wolseley has shown by an exhaustive gathering up of all the arguments on the subject. Some attempts have been made to quote foreign opinion on the other side; but, even if that opinion had been far more decided, it is difficult to believe that it could be seriously appealed to. For the persons who give this advice are precisely the persons who would profit by its being taken. Every nation is the possible foe of every other nation, and therefore it is to every nation's interest that the defences of every other nation should be as weak as possible. Frenchmen would hardly ask Englishmen whether it is wise to strengthen the French navy; nor would Germans consult Frenchmen on the necessity of keeping Metz and Strasburg in a state of repair. On the whole, therefore, the consensus of opinion as to the dangers of the scheme must be said to be overwhelming. But its mere military dangers, as it has been again and again pointed out, do not exhaust the arguments against it. It is as certain as that night follows day that the construction of a Tunnel would be followed by constant disastrous and demoralising panics in which no one but an unprincipled politician or a Stock Exchange gambler could by any possibility find his account, and in which it may be shrewdly suspected that some of the promoters of the Tunnel are prepared to find their account. But all these things have been said before, and it is needless to say them again. They will be found well and authoritatively put in this collection of papers—a collection so decisive that it would be strange if the Government should think of even considering the question any further, or of recommending its consideration to Parliament. The first Standing Order, so to speak, with which every scheme of every kind has to comply is that the safety of the realm be not injured by it; and with this the scheme of a Channel Tunnel has been in effect pronounced not to comply. Perhaps the chief thing surprising in the whole matter to those who have followed it from its beginning is that any Minister or any Department should, even in the vaguest fashion, have ever extended countenance to a project so costly to the nation, so certain to bring about grave political and economical inconveniences, and so likely to give occasion for a national disaster to which—all the circumstances considered—it would be difficult to find a parallel in the history of the world.

THE STATIST, *February* 3, 1883.

THE sweeping condemnation passed by the Channel Tunnel Commissioners upon the scheme for destroying our insular advantages does not seem to have produced much effect on the sanguine promoters. An extraordinary general meeting of the Channel Tunnel Company was held on Wednesday, under the presidency of Lord Richard Grosvenor, at which unabated confidence was expressed. Some alteration of their plans in deference to military criticism was, of course, called for as a matter of expediency, and certain modifications have accordingly been made. The South Eastern Railway now proposes changes which would, it is said, bring the entrance of the Tunnel with its approaches within the range of the defences of Dover; and the Channel Tunnel Company has abandoned the idea of beginning the Tunnel at Dover, reverting to their original

plan of starting from a point some three miles off. These changes are prompted by a desire to show a formal and illusory compliance with the first and third of the conditions laid down by the Military Committee. These conditions are that the Tunnel should not emerge within range of effective fire from the sea, and that it should emerge in the immediate vicinity of a first-class fortress, in the modern acceptation of the term. No such fortress exists at Ewell, where the Tunnel, according to the revised plan, would terminate; therefore, the compliance affected is worthless, and recalls the slippery policy by which the Companies tried to evade the legitimate demands of the Board of Trade. No one can read the correspondence between Mr. Chamberlain and Sir E. Watkin, and between the solicitors for the Department and the Companies, without feeling that it is necessary to scrutinise with the most jealous care any proposal or proceeding of which these Companies are the authors.

In a matter of this kind, a shade more or less of defensibility is not worth a moment's consideration. Such a fortress as the Committee held ought to dominate the opening of the Tunnel, would cost three millions sterling, and would require a garrison of ten thousand men. It is only one of many precautions which the Committee regard as indispensable, but which, taken collectively, they do not regard as placing us in the same security that we now enjoy. The total cost of all these precautions, together with an adequate insurance premium for the risks that remain when all are adopted, ought to be borne to the last penny by the speculators who for their own profit wish to make the Tunnel. But if, for the present, we confine ourselves merely to the purely military securities, the trivial and almost farcical nature of the changes they propose becomes at once apparent. There is only one evidence that they can give of a *bonâ-fide* regard for the interests of the nation, as laid down by a highly competent authority—and that is, to pay at once to the Treasury the sum of three millions required to build a first-class fortress, together with such further sums as may be necessary to provide an adequate garrison. Granting all other objections removed, this payment ought to be an absolute *sine quâ non*. Without it there should not be so much as an hour's consideration bestowed upon any scheme the Companies may concoct, and that for the conclusive reason that unless the undertaking can pay these sums, it cannot be regarded as solvent, but will pay dividends out of the pockets of the British taxpayer. It is bad enough to be asked to incur risks against which there are no entirely adequate precautions: but it is a little too much when we are asked to subsidise the promoters of a purely selfish scheme to the tune of several millions. Yet that is practically the cool proposal now made to this country by the projectors, who say not a single word about the main point in the objections they pretend to have dealt with.

We have no wish to speak disrespectfully of eminent military and scientific authorities, but we are bound to say that the various plans put forth for destroying the Tunnel in case of need would sound better from some Captain of the 'Queen's Navee' in a comic opera than from men charged with the defence of a nation. The mines under the sea, the mines under the land, the electric wires to London and to Dover, the drifts for temporary flooding, the holes for shooting down shingle, and all the rest of the paraphernalia, have that odd air of inebriate gravity that distinguishes the topsy-turvy science of M. Jules Verne. When a mine has been laid for a week or two in the most ordinary conditions, there is only one way of being quite certain that it can be exploded, and that one way is to explode it. But here we have mines laid in conditions altogether unprecedented, and expected to do work such as was never laid upon a mine in this world. Mines are to be so laid that when somebody

touches a button in Downing Street, they are to blow a hole through 200 feet of solid chalk, and open a passage for the sea into the Tunnel. Let any man reflect for a minute upon the nature of the operation, and ask himself where and how the explosive is to be placed to have a chance of doing this; let him ask, further, how proof is to be obtained that any given arrangement is effective without actually letting the sea into the precious passage, and then, we venture to say, he will agree with us, that a more fantastic and chimerical scheme is not to be found even in fiction. Lord Wolseley says he has known not one mine but a succession of them, carefully and recently laid, absolutely refuse to go off when wanted. But we are asked to trust the safety of England to mines laid in novel conditions, precluding conclusive experiment, and laid for use not to-day or to-morrow, but perhaps ten years hence. Lord Richard Grosvenor does, indeed, admit that, in the opinion of Sir John Hawkshaw, it will be impossible to blast a hole through 200 feet of chalk. But this admission is made in an airy off-hand way, as if the impossibility had no effect whatever upon the national bearings of the scheme, but simply relieved the Companies of the trouble of making a mine.

We are constantly told that the Tunnel will pay, but we never hear a definition of the phrase. In what sense is it so confidently predicted that it will pay? It is pure matter of speculation to assume that there will be a large passenger traffic. Those who declaim against the horrors of the sea are the most noisy, but not necessarily the most numerous class of travellers. Of that class it remains to be seen how many will prefer twenty-five miles in a tunnel to a short spell of sea-sickness. To avoid breaking of bulk in goods is no doubt a great advantage, but, like gold, it may be bought too dear. Our shipping interest will certainly not let its occupation go without a struggle, and it is quite possible that before the Tunnel can be finished the existing modes of transit may be so much improved and cheapened, as to make it very difficult to obtain sufficient traffic at remunerative rates. The cost, even if existing estimates are not exceeded, may be put at half a million a mile, and the costs of maintenance will be exceptionally heavy. We have no example of a railway of anything like the length of the Tunnel costing such a sum per mile, and the nearest analogies, though fed by cheaper lines, give by no means encouraging results. If the new line is fairly made to bear the expenses we have already indicated as properly belonging to it, we are by no means certain that it will ever yield a dividend to its constructors. But the question whether it will pay is a much wider one than that. Lord Wolseley has pointed out with great force that unless we sink into a false security, which will be the certain harbinger of ruin, the existence of an unassailable communication with the Continent will give rise to frequent panics. What amount of saving to the general industry of the country will the Tunnel have to effect in order to compensate the nation for even a single panic? That is the real question for the responsible Government of this country, though, of course, it is one which the race of company-promoters can hardly be expected to entertain.

THE FIELD, *April* 8, 1882.

THE announcement that the Board of Trade have given notice to the directors of the Channel Tunnel Company not to proceed with their boring operations beyond low-water mark, has been generally received with a feeling of relief. There can be no question that the comments in the public press, to which we are glad to think we contributed our share,

have greatly helped to call attention to a matter which otherwise, so far as Parliamentary sanction went, might have been concluded before people had become aware of the consequences it was likely to entail.

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People are no longer styled senseless alarmists for expressing their belief that a Channel Tunnel—to be followed, perhaps, by a second and a third—would be a source of danger to this country. Opinions on this head of course differ; but the vast preponderance of knowledge, experience, and authority is on the side of caution. We shall await with some anxiety the report of the Military Committee now engaged in the consideration of this very point. It is to be hoped that the inquiry will go beyond the mere question of defending the English end of the tunnel against open attack. No one doubts, we should imagine, the possibility of so fortifying the locality as to enable its defenders to maintain their position against an invading force, sufficiently long to give the former time to put in operation the means that may be provided for the destruction of the tunnel, or the effectual blocking up of the passage through it. This, however, is not the most serious matter to be thought of. All is fair in love and war, and it would be the most fatal folly to suppose that, because among civilised nations a declaration of war precedes open hostilities, that courteous practice is never to be departed from, and that the temptation to gain, by secret means, so paramount an advantage as complete possession of the passage between England and the Continent would give, would never be too strong to be resisted. Besides the secret designs of foes, there is another danger to be guarded against—one against which the strongest defences are powerless, viz., treachery. Every day furnishes us with terrible proof that in the United Kingdom itself, and within easy reach of it, there are numbers of daring and reckless persons who are not withheld from the commission of crime by any feeling of patriotism. To gain their sinister ends they would not hesitate to sacrifice the independence of the country of which they still, we suppose, style themselves citizens. Examples have not been wanting of late of the audacity of such men as these, and of their contempt of life, whether their own or that of others. A few men of this stamp, by a well-laid scheme, might frustrate at the critical moment the most elaborate precautions against danger which our military defenders could provide. Is it wise, is it common prudence, to permit the execution of a profitless work which might place our liberties, our lives, and our property at the mercy of a handful of unprincipled desperadoes?

The current number of the *Nineteenth Century* contains a forcible protest against the scheme of a Channel Tunnel, signed by men all of some eminence, and differing most widely in their social and political views. Sinking those differences in face of the danger to their common country, they unite in denouncing the undertaking which a comparatively few persons, and these, for the most part, pecuniarily interested in the matter, have endeavoured to force upon the acceptance of the nation. We trust that the opposition to this untoward scheme will not be relaxed because it has become formidable, but that it will increase, and not diminish, until the object it aims at be gained—the abandonment of the Channel Tunnel.

JOHN BULL, *April* 1, 1882.

WE own that we regard with considerable satisfaction the gradual growth of a strong public feeling against the proposal to rob our country of the safeguard of that silver streak on which statesmen have dilated with so

much enthusiasm. Into the merits of the conflicting schemes advocated by the Government Whip and by the Railway King we have no desire to enter, though the weight of engineering evidence seems to be in favour of the plan put forward by Lord Richard Grosvenor's Company rather than of that for which Sir Edward Watkin is responsible. However, this may be left for them to fight out between themselves, and, from our point of view, the more chance of engineering failure there is in one than in the other, the more glad we should be to see that one adopted rather than its more promising rival. 'A plague on both your Companies' is our verdict, and we are, as we have said, not a little rejoiced to find that the view which is making way in England is in accordance with our own. The remarkable protest against the Tunnel contained in the current number of the *Nineteenth Century*, signed by men of many shades of opinion, is but the expression in words of the feeling against the sanction or execution of any such work which is widely entertained among a dumb inarticulate crowd of Englishmen who, recognising the danger of the proposal, have not hitherto seen their way to making their opposition felt. . . . . A Commission is, indeed, sitting to study the military question, but its duties are rather to recommend precautions than to advise whether, even if all precautions are taken, it is wise, from a strategic point of view, to allow so formidable a breach to be made in our defences. Assuming that this Committee organises a perfect scheme of defence which will make the Tunnel impregnable, there will be the difficulty of getting such a scheme carried out, especially as it must of necessity involve a vast expenditure of money. Then we have to consider the changes and alterations, the blunders and the controversies which are sure to crop up in the course of carrying out such a scheme. The very best suggestion for neutralising the dangers of the Tunnel, carried out in the most satisfactory manner, must yet leave us in a worse position than we are without a tunnel: how much more so when the suggestion, judging from past experience, is not the very best, and is not carried out in a most satisfactory manner? Then there is the keeping up of the defences. At first, perhaps, the money will be voted pretty freely, but by degrees, as the remembrance of the change which has been wrought in our position grows fainter, there will be less readiness to incur the necessary expense and more grumbling over the large sum voted for the maintenance of them. A Radical Government of strictly cheeseparing and peace-at-any-price proclivities will carry out its reductions with the fearless energy of ignorance, and the outcry against the increased expenditure in troops and fortifications which will be caused by the existence of the Tunnel will be added to the difficulties with which those responsible for the safety of the country from foes abroad as well as at home have to contend. Perpetual panics and increased military expenditure are the natural result of such a change as that which will convert us from an island into a peninsula. Nor are we comforted by the assurance of a rapid and easy method of destroying the Tunnel in case of invasion which is held out to us. It will be necessary not only to have the means of so doing, but to make sure that there will be fatal hesitation in employing them, such as that which left the railway tunnel through the Vosges open to the German invaders. We can hardly fancy Lord Derby, for example, sanctioning the destruction of so vast an amount of valuable property, or the General-in-Command taking upon himself the responsibility of so doing without telegraphing for orders. It may be said that these chances of danger are remote, but we cannot afford to run them, however remote they may be.

JOHN BULL, *October* 14, 1882.

IT may be assumed that nothing more will be heard of the scheme for a Channel Tunnel, and that the advantages of England's insular position will not be wantonly sacrificed in order to make the fortunes of a few speculators, and to save a few travellers from sea-sickness. The vigorous manner in which this fantastic scheme has been pushed forward, and the knowledge that a Government held office not altogether influenced by the considerations of common sense, have undoubtedly inspired some alarm lest the company of which Sir Edmund Watkin and Lord Richard Grosvenor are the well-known representatives should obtain the Parliamentary authority that it has so industriously sought. The publication of the Blue Book containing the statements of the opinions held by the Duke of Cambridge and Sir Garnet Wolseley must, however, prove decisively fatal to the scheme. The military arguments are so obviously conclusive that no attempt is likely to be made to meet them. Immunity from sea-sickness is doubtless an excellent thing, but immunity from invasion is a better. The national advantages of a Channel Tunnel would be absolutely trivial; at what a cost they would be purchased has now been elaborately demonstrated.

THE ARMY AND NAVY GAZETTE, *February* 18, 1882.

IT is ridiculous to despise the idea of an invasion of England, or to look upon it as a sheer absurdity. The Island has been invaded again and again. The present constitution of the country depends on the last successful invasion by a Dutch Prince with Dutch troops, and the overthrow of the King, by an army largely composed of foreigners. Suppose that at the time of the coldness between France and England, which arose on the Egyptian rebellion against the Sultan in Mehemet Ali's time, the tunnel existed, what would have been the position of this country with regard to it? The Government would have had either to destroy it, or to keep an army at the entrance and a fleet off 'the little hole,' when we were scarcely able to hold our own in the Mediterranean against the French navy. What would have occurred in England at the time the French Colonels demanded to be led against the conspirators in London had the tunnel been in working order? Why, there would have been an immense increase of uneasiness and a great weakening of our strength,—universal agitation and panic caused by its existence. Any foreign enemy who meditated seriously an attack on England would certainly put the Channel Tunnel into the calculation of ways and means towards his object. In taking the value of Sir John Adye's opinion into account, it must be remembered that it was his deliberate, vehement, and long-continued resistance to the introduction of the breech-loading system into our artillery that placed us at the fag-end of all the world, when we ought to have been first. We confess to reading with the profoundest feelings of distrust the assurances of Sir John Adye that the Channel Tunnel does not afford any ground for diminished confidence in the security which England enjoys in its insular position. These feelings are not in any measure lessened by the facetiousness with which the gallant officer illustrated his confidence in the inspiring picture of himself frightening away a few thousand Frenchmen by the very sight of the Bunkum Volunteers, all clad in steel and led by shallow Richmond. It may be very well to laugh at the narrow tube under the sea, and the little hole in England at

the end of it; but if any general of established reputation in Europe takes the same view of the enterprise as the Director of Stores, we, for our part, shall at once accept his authority, though we shall not subscribe to the tunnel. Sir A. Clarke is a very respectable authority on public works, and a man of professional experience, but without disrespect to him, we may be permitted to doubt his fitness for determining such a military question as is involved in the construction of the tunnel. What would be the possibility of seizing the English end, and converting it into a place of debouchement, under cover of a *tête-de-pont?* We at once admit it would be a very remote possibility. But such a thing might be. It is not utterly impossible. No one can contend it is utterly impossible to execute a *coup-de-main*, and all the argument the other way must be directed to show not that it is most unlikely, but that it is not within the range of probability. There is the rub. Is the tunnel to be made, even though it be made with such a very remote chance that the British end of it could be snatched at and held for a few hours by any enemy? Would it tend to our comfort, our sense of inviolability, our peace of mind? We think not. The element of danger does not lie in its primary use as a means of subterranean conveyance of an armed force, but in the actual contingency of the British shore end being converted into a sort of *tête-de-pont* of the Channel itself, by the action of an expeditionary force pouncing, so to speak, on the coast, and holding it against the forces available on the spot, till the troops ready at the Continental side should be carried through the tunnel.

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